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Connecticut Medicine

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Volume 36/July 1972/Number 7

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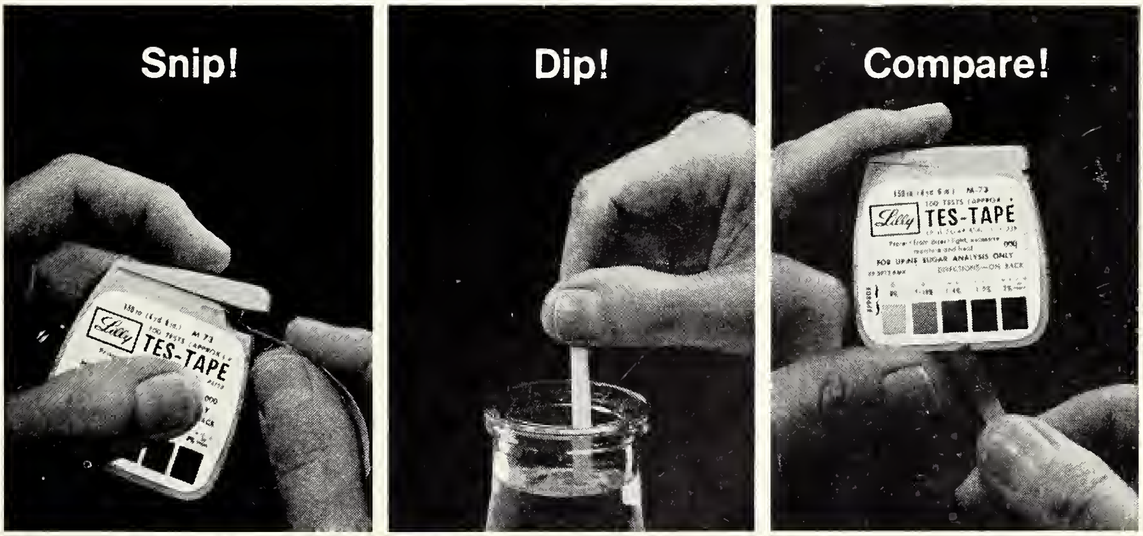

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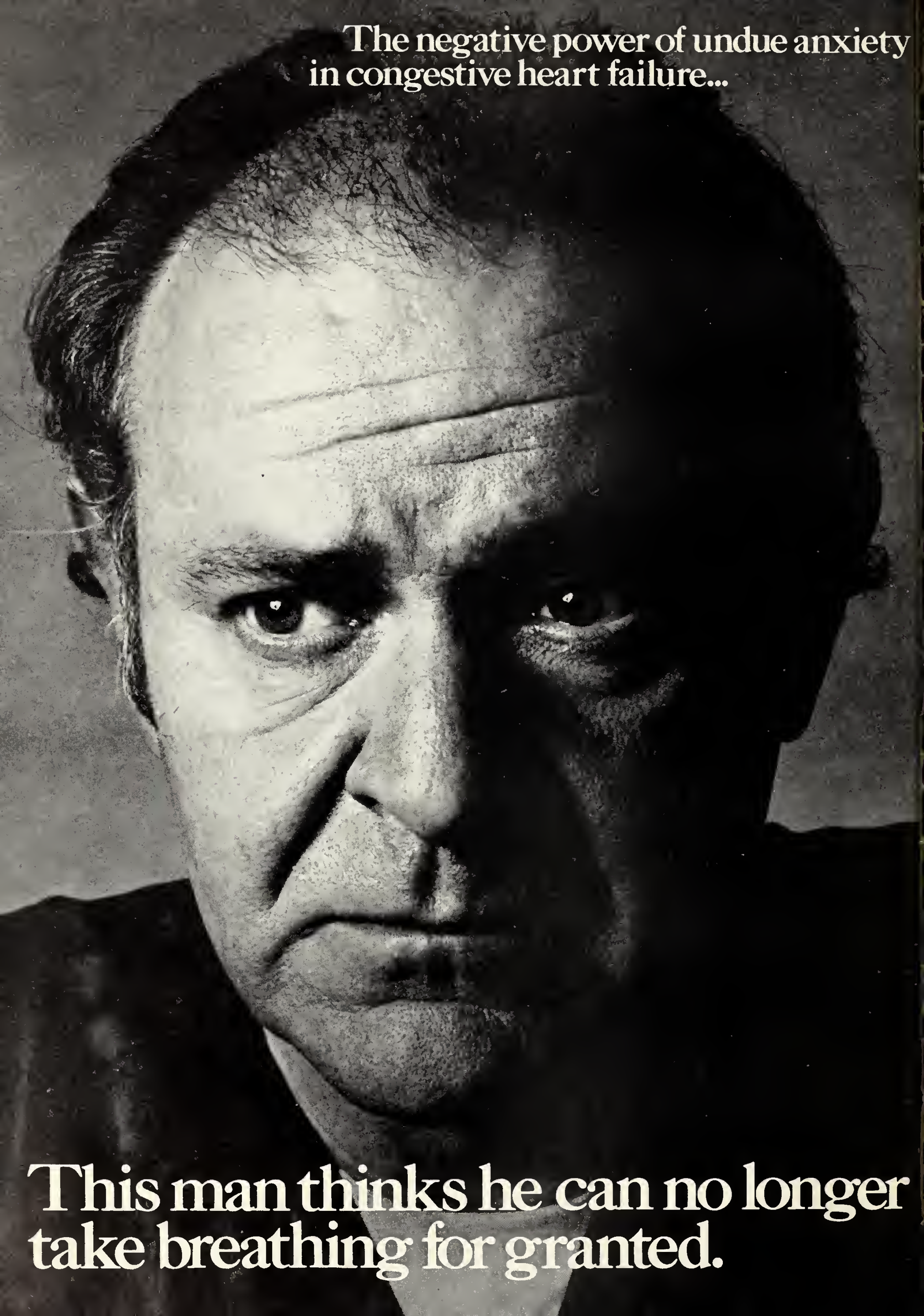
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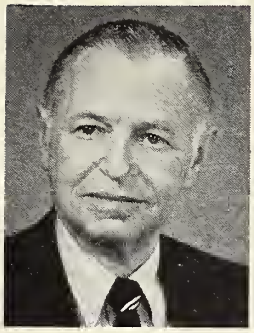

To its greater glory, medical practice has been bound by a code of ethics dating back to at least the 4th century B.C., the date of origin of the "Hippocratic Oath". With changing times and mores, it is self-evident that any code of ethics must change. "Especially I will not aid a woman to procure abortion" cannot be strictly adhered to, even by staunch opponents of abortion on demand.

"Whatsoever things I see or hear concerning the life of men, in my attendance on the sick or even apart therefrom, which ought not to be noised abroad, I will keep silence thereon, counting such things to be as sacred secrets." This has been and still is a good guiding principle, a guarantee of the confidentiality of the information obtained in the intimate and trusted relationship between physician and patient. But we all know that this must be breeched when superseded by legal statute, as for example the legal requirement of reporting a gunshot wound to the police or a venereal infection to the public health authorities. These inroads on "sacred secrets" have been justified, and are probably justifiable in the interests of society.

A more recent encroachment on the concept of confidentiality, however, was an advertisement placed in AMA specialty journals, the *Archives of Internal Medicine* and the *Archives of Dermatology,* placed there by the Federal Bureau of Investigation requesting the aid of physicians in finding a young woman "wanted by the F.B.I.", and another advertisement in the *AMA Journal* seeking the cooperation of physicians in finding a nurse's aid "wanted by the F.B.I." for defaulting on her bond. In both these instances, physicians are asked to *voluntarily* become parties to the police functions of society, and, in so doing, to violate the privacy of their patients. The Judicial Council of the AMA found that no ethical question was involved. The National House Staff Conference of internes and residents passed a resolution condemning the publication of such advertisements.

While we must realize that a code of ethics may change, we must ask ourselves what pressing need there is for such change and whether in the effort to apprehend a single criminal we are not doing irreparable harm to a principle adhered to for centuries. Will society gain anything from making medicine a voluntary arm of police enforcement, if at the same time it becomes public knowledge that confidential disclosures to one's physician may be transmitted to the police? With the proliferation of secret files and data storage banks privacy is rapidly becoming obsolete. Is it in the interest of either society or medicine to invade the sanctity of the physician's consulting room?

I am inclined to agree with the resolution of the internes and residents, rather than the official pronouncement of the AMA Judicial Council. I do not believe that "public service" justifies the use of medical journals, much as the official bulletin boards in post offices, for printing "wanted" notices. I do believe an ethical question is involved. But even from a pragmatic viewpoint, society would be better served if it continued to believe that freedom of *private* access to a physician still exists in this country. Let the police do their policing while doctors care for the sick in the best Hippocratic tradition.

David A. Grendon, M.D.
President

Comprehensive Care of Adult Acute Leukemia

Roland T. Skeel, M.D.
Ronald C. DeConti, M.D.
John C. Marsh, M.D.
Malcolm S. Mitchell, M.D.
Joseph R. Bertino, M.D.

Despite the development of new anti-neoplastic agents, improved treatment schedules, and more rational drug combinations, management of the adult with acute leukemia continues to be a therapeutic challenge. This is directly related to the fact that the success or failure of any chemotherapy is as dependent upon adequate prevention and treatment of complications as it is on the ability of drugs to eliminate the leukemia rapidly from the body. The diagnostic, prophylactic, and therapeutic decisions related to management of leukemia and its complications have reached such degrees of sophistication that it is difficult for physicians not routinely caring for acute leukemia to administer optimal care.

The Oncology Section of the Department of Medicine at Yale currently has a program for care of the adult with acute leukemia that combines modern rational chemotherapy with a comprehensive management program. It is the purpose of this communication to describe the various facets of this program.

Psychological Supportive Care

When the diagnosis of leukemia is made the physician must decide what to tell the patient. While some physicians believe it is better that the patient not know his diagnosis, we believe this is rarely the case, particularly if the patient is to undergo intensive chemotherapy. The decision as to how much to tell the patient is more difficult and depends upon the medical sophistication and emotional stability of the patient. In general we tell patients the diagnosis and describe the nature of the disease. We point out that there is no known cure, but that there is treatment which is often effective in changing the blood picture back to normal. We give no specific prognosis, but stress the variability among patients and try to impart to the patients as much optimism as possible.

When possible, patients are hospitalized on our Clinical Pharmacology Research Unit for management and drug treatment. By virtue of their interest and in-service training the nurses on this unit have become specially skilled in giving the leukemia patient emotional support. Psychiatric consultations are obtained frequently to give the physician and nursing staff assistance and insight into a patient's particular problems; a weekly conference for the nursing staff is held by a staff psychiatrist to discuss current ward problems. Clergy visit the patients routinely and are available on call should an immediate need arise. Efforts are made to develop close rapport with family members and to improve family interaction and understanding of the problems involved in dealing with the illness and its complications.

As part of an effort to improve our understanding of psychological aspects of malignancy Dr. Robert R. Davies and others from the Department of Psychiatry and Psychology studied the cognitive functions of 46 patients with leukemia and other advanced cancers and found evidence for cognitive impairment in nearly one half[1]. Of particular interest was their observation that the patients who showed cognitive deficits on formal testing survived

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for longer periods than those who did not. They surmised that "the diminution of interests, concerns, and time sense" allowed the patient to "adapt to relatively more concrete and immediate circumstances. Impaired abstraction and time sense may reduce despair over future difficulties." Awareness of these findings has directed the physicians and nurses directly responsible for patient care to talking with the patient more directly about efforts at symptom relief rather than long term management.

Chemotherapy

Background

Prior to the latter part of the 1940's there was essentially no effective treatment for any kind of acute lukemia. Beginning with the report by Farber and colleagues[2] in 1948 of remissions induced by aminopterin, there has been a steady stream of new agents capable of inducing and maintaining remissions in acute leukemia. Within the past 10 years many of these drugs have been administered in combinations, either sequentially or simultaneously. Childhood acute lymphocytic leukemia (ALL) has been most responsive to the largest number of new agents and combinations. In the 23 years since chemotherapy was introduced, the median survival of ALL of childhood has climbed from about 3 months to 3 years. Acute myelogenous leukemia (AML) of childhood, ALL of adults and AML of adults have been relatively less responsive with median survivals generally being a year or less. It is, in fact, only within the past few years in which daunomycin and cytosine arabinoside have been available and have been combined with other agents that complete remissions of adult AML have been induced with any regularity, and median survivals have improved above those achieved without treatment. (This is not to belittle the fact that previously, occasional patients responded with long remissions and survivals.) For a comprehensive discussion of the treatment of acute leukemia the review of Henderson[3] is recommended.

When combinations of drugs were first used in acute leukemia, the choice of drugs was largely dependent upon 1) known effectiveness in different stages of the leukemia (e.g. prednisone and vincristine in induction, 6 mercaptopurine (6MP) and methotrexate (MTX) in maintenance), and 2) different host toxicities. It was anticipated that such combinations would achieve additive anti-tumor effect without increased risk to the patient. The success of this approach in childhood ALL is attested to by the significant improvement in remission durations and survival since combinations have been used.

Because the more empiric approach to treatment has not been as successful in adult leukemia as in childhood leukemia, the chemotherapist has "gone back to the drawing board" to see if more effective chemotherapy could be devised. The L-1210 murine leukemia has been particularly useful in screening single agents and combinations for anti-tumor effect. Because of the demonstration of synergism between cytosine arabinoside (Ara-C) and 6MP in this system by Burchenal and associates,[4] Ara-C was combined with another purine antagonist, 6 thioguanine (TG) in the treatment of AML[5]. The marrow remission rate of 50% and median survival of 11 months observed for this group of patients are significantly better than most previous reports of response to this disease.

Rationale for Yale Program

The evidence which suggested that experimentally evaluated drug combinations hold the greatest current promise for improving the outlook in adult acute leukemia encouraged us to begin a program of treatment based upon recent findings in L-1210 mouse leukemia. One of the reasons treatment may fail is that by the time the leukemia is diagnosed, many cells are not rapidly dividing[6] and are not so susceptible to anti-metabolites which are more active against rapidly dividing cells. Because the L-1210 leukemia cell division rate also decreases as the tumor ages, late L-1210 leukemia has been used as a model for human leukemia. We have extensively evaluated combination therapy with cyclophosphamide (CY), MTX and Ara-C in this L-1210 model. Our observations[7] that late stage tumor responds well only when a non cycle-specific agent (CY) is added to cycle specific agents (MTX and Ara-C) confirms similar results reported by others. This combination of drugs has been used in 17 adults with acute leukemia over the past 1 1/2 years and has yielded encouraging results.

Summary of Clinical Experience

Patients with both ALL and AML are treated with CY, Ara-C, and MTX. Those with ALL are given leucovorin at 24 hours to "rescue" normal marrow and mucosal cells. Leucovorin is not given to patients with AML because of the clinical impression that it also "rescues" the myelogenous leukemia cells. The current drug dose and schedule are as follows: the MTX is given at a dose of 80 mg/m^2 as a 24 hour infusion. During the first 1/2 hour of this infusion, CY, 1.0 gm/m^2 is infused;

during the second 1/2 hour, Ara-C 300 mg/m^2 is infused. Patients with ALL receive leucovorin, 25 mg/m^2 as a 6 hour I. V. infusion at the end of the MTX. The regimen is repeated at weekly intervals with up to 4 courses for induction depending on the response.

The results of the current regimens are summarized in Table I. Following induction, the remission is "consolidated" with continued intensive therapy. The incidence of complete marrow remission is particularly encouraging since both the ALL and AML groups include some patients who have been previously treated and become resistant to other drugs (including TG and Ara-C). Complete remissions have been seen with equal frequency in previously treated and untreated patients. Patients who do not go into remission or relapse while on CAM or CAM-L therapy are eligible for treatment with a wide variety of drugs. Patients with AML are treated with TG and Ara-C unless they have previously demonstrated resistance to this combination. Those with ALL may be treated with vincristine and prednisone or L-asparaginase for remission induction. If resistance (to these agents) is subsequently seen, patients with either disease may be candidates for more investigational drug therapy with agents such as adriamycin. When possible *in vitro* biochemical tests are done to help predict which agents are likely to be most useful.

Management of Complications

As indicated in the introduction, the success of a chemotherapy regimen such as described above is highly dependent upon the successful management of the medical complications of the leukemia and its treatment. The major complications can be divided into four major categories: bleeding, infection, extramedullary leukemia, and metabolic disorders.

A. Bleeding

Prior to the availability of platelet transfusions, thrombocytopenic hemorrhage was the foremost cause of death in acute leukemia. The picture has changed dramatically in the past ten years since platelet rich plasma and platelet concentrates have become part of the blood banking service. Our policy is to give platelet transfusions to most patients who have platelet counts of <20,000 during induction treatment[8]. We recognize that many patients may not bleed with platelet counts below this but are convinced that the increased risk of serious bleeding warrants prophylactic transfusions. A concern with prophylactic platelet transfusions is that the patient will develop platelet antibodies. This, does, in fact, occur, though to a lesser degree in patients undergoing treatment with chemotherapy than in patients who are receiving no immunosuppressive drugs. If bleeding does become a problem, sibling donors[6] can be used with at least a 1 in 4 chance that any given sib will be an HL-A match and have compatible platelets. The sibling can be plateletpheresed for 4 units twice a week during the acute episode and if other causes of rapid platelet destruction are controlled, the bleeding will be adequately controlled.

While most thrombocytopenias are due to leukemic invasion or drug suppression of the marrow, a few patients (especially those with promyelocytic leukemia) have thrombocytopenia secondary to disseminated intravascular coagulation. This is diagnosed by finding thrombocytopenia, hypofibrinogenemia, and an elevated PT and PTT. Treatment of the hypercoagulability with heparin and prompt treatment of the leukemia offer the best prospect for control of this complication.

B. Infection

The most persistent problem in the day to day care of patients with acute leukemia is infection. With the decrease in hemorrhagic deaths in acute leukemia, infection has become the prime cause of death. Gram-negative septicemia heads the list of

TABLE I

RESULTS OF COMBINATION TREATMENT OF ADULT ACUTE LEUKEMIA

			Response		
Disease	*Treatment*	*Total*	*M-1*†	*M-2*†	*Peripheral Remissions*
I. Acute Lymphocytic Leukemia	CAM-L**	7	4	2	1*
II. Acute Myelogenous Leukemia	CAM **	10	5	0	0

*Post Treatment bone marrow not obtained

**CAM —CY, Ara-C, MTX

CAM-L—CY, Ara-C, MTX, leucovorin

†M-1—Less than 5% abnormal cells in marrow of 2+ or more cellularity

M-2—5 to 25% abnormal cells in marrow of 2+ or more cellularity causes with gram-positive bacteria being relatively uncommon. Other etiologies of infection include the fungi (candida and aspergillus), protozoa (pneumocystis and toxoplasmosis), and viruses (herpes, cytomegalovirus).

Because the body is dependent upon normal immunologic and cellular defenses to ward off these infections, the patient undergoing treatment of leukemia is under triple jeopardy; his remaining normal marrow cells (if any) are further reduced by the chemotherapy; his normal immunologic responses are suppressed, and his gastrointestinal tract may become denuded and no longer be an effective barrier to the invasion of normal gut organisms. Because infection in the leukemic may run a fulminant course, the physician must remain alert for the appearance of any sign of infection, such as unexplained fever or hypotension. Since the cause of fever is often undiscovered after intensive evaluation, leukemia *per se* has been implicated as the etiology. While this may be true, because infection is such a frequent cause of death in acute leukemia, it is far safer to assume that the fever has arisen from an occult infection. Routinely, if a patient with less than 1000 granulocytes/mm^3 develops a fever to 102° F. or more, we obtain throat, sputum, urine, stool, and blood cultures and begin systemic antibiotics without waiting for culture results. Antibiotics are chosen to give coverage against Gram-positive and Gram-negative pathogens, including Pseudomonas species. If one of the cultures is positive, the appropriate antibiotics are continued for at least 10 days or for 3 days after the patient becomes afebrile. Reculturing is carried out at frequent intervals and fungal, protozoan and viral etiologies are considered carefully.

The workup of fevers of undetermined origin naturally includes a) repeated physical exam, looking for some sign of localized infection such as perirectal abscess, hidradenitis, or tooth abscess, and b) appropriate x-ray examinations and other laboratory tests.

Within the past year our potential ability to treat life threatening infections in granulocytopenic patients has been improved by the acquisition of the NCI-IBM blood cell separator. This machine, which was designed to concentrate white cells from normal persons so that a single donor could donate sufficient granulocytes to provide these essential cells to a leukopenic recipient, has been used successfully here at Yale as well as several other cancer centers throughout the United States and Europe. The availability of such facilities as this increases the likelihood that the patients treated with intensive chemotherapy will survive the induction period and will go into remission.

C. Extramedullary Leukemia

Leukemia is primarily a disease of the bone marrow and blood. When it occurs outside these confines it may be spoken of as extra medullary leukemia. Lymph nodes, liver, and spleen are frequently sights of extramedullary involvement, but the degree of disease in these sites usually parallels the involvement in the marrow. If these extramedullary sites remain a problem while the patient is in remission, local ratiotherapy provides prompt relief. The central nervous system (CNS) is unique in that it is frequently involved while the patient is in marrow remission. This presumably is due to poor penetration of most anti-leukemic drugs across the blood-brain barrier. Prompt recognition of the most frequent type of CNS involvement, meningeal leukemia, is essential if seizures, coma and death are to be prevented. The diagnosis and treatment of this syndrome has been summarized recently[10].

The other common form of CNS leukemia is intravascular leukostasis and hemorrhage.[11] This occurs almost exclusively when the peripheral blast concentration is greater than 100,000 cells/mm^3, and thus a primary objective in treatment is the rapid reduction of the abnormal cells. This may be achieved by any number of drugs such as cyclophosphamide or hydroxyurea and the choice of agent is probably of little consequence. Cerebral radiation 250 rads/day for 2 days may also be of benefit by killing those leukemic cells which have already escaped from the confines of the vascular space.

D. Metabolic Alterations

The patient with acute leukemia is subject to metabolic complications due both to his disease and its treatment. The serum uric acid concentration is commonly high in untreated leukemias and lymphomas and may rise to dangerous levels after the initiation of treatment. Uric acid nephropathy can be prevented in most cases by the administration of allopurinol, 300 to 600 mg/day for 2 days before and during chemotherapy, and by giving 2 L/m^2/day of I.V. fluids during the 1st two days of treatment.

Lactic acidosis frequently accompanies shock, as a result of anaerobic glycolysis and on occasion has been attributed to the leukemia *per se*[12]. Rapid recognition and treatment to restore tissue oxygenation and reverse the acidosis is necessary to prevent irreversible changes.

Acute renal failure is most frequently encountered in acute leukemia as a result of a) uric acid nephropathy, b) sepsis, c) hypotension, and d) antibiotics such as kanamycin or amphotericin-B. The establishment of the correct etiology is essential if appropriate measures to prevent irreversible damage are to be taken.

Liver function abnormalities may occur as a result of a) leukemic infiltrates in the liver, b) serum hepatitis, c) bacterial or other infection, or d) drug toxicity. Again, the correct diagnosis is necessary in order that appropriate treatment may ensue.

New Developments in Leukemic Treatment

Within the past few years basic and clinical research have opened new avenues for improving the care of patients with acute leukemia. Better supportive care in the prevention of life threatening infections with Pseudomonas septicemia has been achieved with the use of prophylactic antibiotics and laminar flow rooms[13]. There is also some indication that more chemotherapy can be given while a patient is thus protected and that subsequent remissions may be longer[14]. We are beginning to use oral non-absorbable antibiotics and will be obtaining a laminar flow room in the near future.

Treatment of the leukemic process continues to improve as new drugs become available and more is learned about how they may best be combined. In childhood ALL it has been shown that complete remissions can be prolonged if intensive systemic combination chemotherapy is supplemented by high dose cranio-spinal irradiation or intrathecal methotrexate and irradiation to just the cranial vault[15]. Our current therapeutic approach is to use similar treatment for adult ALL in which meningeal leukemia is also a frequent mode of first relapse.

Bone marrow transplantation from a matched sibling donor as a mode of therapy has been used with some success[16]. We are routinely obtaining tissue typing on new leukemics and are prepared to do marrow transplantations when conventional therapy is exhausted in a patient with a matched donor.

Immunotherapy is likewise under active investigation, and may be useful in eradicating all leukemia from the host.

Conclusion

The treatment of adult acute leukemia has improved over the past few years, but as the management has become more comprehensive, it has also become more complex. If intensive combination chemotherapy is to be undertaken it is most safely carried out by experienced physicians with adequate support facilities.

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Anemia and Iron

David H. Clement, M.D. and Howard A. Pearson, M.D.

During the course of a screening program in New Haven (still in progress) for the detection of thalassemia minor, we have discovered that several healthy individuals, who have this trait, have been receiving iron for long periods of time from their physicians. The medication had even been given parenterally.

Case Report: A 42-year-old woman and her 14-year-old son were found to have thalassemia trait during the screening program. Her blood values were: Hemoglobin: 11.3 Gm., Hematocrit: 37%, Mean Corpucular Volume: 72 cu. m., Hemoglobin A_2: 5.8%, Serum Iron 220 μg% and Total Iron Binding Capacity: 330 μg%.

Her past history revealed that anemia had been first diagnosed when she was in her teens and oral iron had been given for several years without appreciable response. Anemia was again noted during her two pregnancies and oral iron had been prescribed. Following her second pregnancy, anemia was again detected. Seven injections of intramuscular iron were given during a six-month period. No significant increase in hemoglobin level was documented.

It is understandable that the mild anemia of thalassemia minor may be confused with iron deficiency anemia for both are hypochronic and microcytic. These superficial similarities, however, are greatly overshadowed by important metabolic differences which have widely divergent therapeutic implications.

Iron deficiency anemia responds promptly (1-2 weeks) to adequate doses of ferrous iron salts, given orally in most instances. Response should be documented by observations of the hemoglobin or hematocrit and reticulocyte levels both *before* and after treatment. Unlike the thalassemias, in untreated iron deficiency the reticulocytes are generally low. (In this connection, every anemic patient should have a reticulocyte count made before therapy is begun. Important information is thus obtained regarding red cell production and destruction. The problem of diagnosis is often broken in half and greatly simplified.) By the use of gradually increasing amounts of iron, it is unusual to encounter intolerance of sufficient degree to necessitate parenteral injection[1]. The latter route is not without potential danger[2].

It is important to remember that failure to respond to adequate amounts of ingested and tolerated oral iron is *not* an indication for parenteral iron. This therapeutic failure strongly suggests that the diagnosis of iron deficiency is incorrect and that another explanation for the patient's anemia should be sought: Blood loss from an unsuspected gastrointestinal lesion, such as ulcer or carcinoma, the azotemia of chronic renal failure, the anemia of lowgrade infection, a drug depressing red cell production or increasing red cell destruction, a hemolytic anemia, a hemoglobinopathy, etc. Such a therapeutic failure may in fact be the physician's last best opportunity to make a correct diagnosis and to initiate therapy which may even be life-saving. This is especially true in the adult male where iron deficiency on a dietary basis is rare in most parts of this country, and bleeding from an occult malignancy is more likely.

In Connecticut, there are tens of thousands of citizens of Mediterranean origin. Among the Italian and Greek communities of our state there is a significant number of people with thalassemia trait which at present remains unrecognized. As stated at the beginning of these comments, an attempt is now in progress to identify a portion of this segment of our population and thus to alert physicians and these affected individuals to the potential hazards of unnecessary iron therapy.

Although persons with thalassemia minor are healthy and generally live long and normal lives, patients with thalassemia major (Cooley's or Mediterranean anemia) encounter serious difficulties. They suffer from anemia, hypoxic damage to tissues, increased susceptibility to serious infections (especially after splenectomy) and slow, inexorable and progressive hemochromatosis. The latter leads to cirrhosis of the liver, diabetes mellitus in the pancreas and myocardial injury that leads to the heart failure that is frequently a threat to survival itself. These patients are slowly dying of chronic

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iron poisoning. Because of their anemia and deranged iron metabolism, they absorb increased amounts of even food iron as well as medicinal iron. By either route they are unable to utilize it. And though they require transfusions to survive, these further accelerate their hemochromatosis.

Individuals with thalassemia trait generally have only a mild anemia, shortened red cell survival and also absorb increased amounts of iron— which they don't need and cannot incorporate into hemoglobin[3,4]. Since even normal adult males ingesting diets high in iron over a period of years may develop hemochromatosis[5], it is especially important for individuals with thalassemia minor to avoid the ingestion of medicinal iron over any extended period. A brief trial on oral iron may be justified as a diagnostic maneuver if anemia and reticulocytosis are evaluated before and after about two weeks of therapy as noted above.

It is important to realize that thalassemia minor will often go undetected in clinical laboratories when the usual hematologic tests are performed. Too often a reticulocyte stain is not made and on the conventional blood smear the abnormal red cell morphology of the hypochromic, microcytic anemia is attributed to iron deficiency. Actually there is often a clue, in that, for a given degree of anemia, thalassemia minor usually has appreciably more morphologic distortion of the red cells, frequently with targeting and stippling, than one finds in iron deficiency of the same degree.

It should be remembered that thalassemia minor can be diagnosed with certainty only by means of tests that are more sophisticated and at present more expensive than the usual estimation of anemia and examination of a blood smear. Hemoglobin electrophoresis and especially quantitative measurement of hemoglobin A_2 are essential for the diagnosis. In the most common variety of thalassemia minor, levels of hemoglobin A_2 are above the normal limit of approximately 3.5%. In certain other cases, there may be an increase in fetal hemoglobin, although the hemoglobin A_2 level is normal. (In thalassemia major it will be recalled that there is no abnormal hemoglobin present, but fetal hemoglobin is elevated and may reach extremely high levels. These are not related to the severity of the disease.) It is hoped that in the near future, with these latter tests being requested and performed more frequently and with improved methods, their costs will decrease and that they will be widely utilized.

We must not forget that anemia is a sign, not a disease. It represents a disturbance in the baalnce between red cell production versus red cell destruction or loss—a balance that in health is maintained with wondrous precision. In treating patients, we do well to keep in mind certain basic physiologic factors affecting this equilibrium. Especially in the management of anemic patients of Mediterranean descent, we should think of the thalassemias and use caution in prescribing iron. It is preferably given by mouth only after excluding other obvious causes of anemia for a brief trial period with before and after observations of the anemia and the reticulocytes.

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Impact Of Insurance Coverage On Convalescence And Rehabilitation Of Head-injured Patients

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The interdependence of men is manifest more clearly in insurance than in any other line of human endeavor. Though ancient in principle, the achievement of planned security has obtained wide acceptance only in modern times. The urban complex replacement of rural living, where the family cared for its own, led to a system by which groups of individuals could help each other in times of adversity. The Industrial Revolution, and particularly the development of the railroads, brought emphasis to the need for insurance coverage against injury from accidents.

In 1967 in the United States, accidents caused 10,914,000 disabling injuries (defined as an injury that prevents a person from performing any of his usual activities for a full day beyond the day of accident). Of these, 3/4 million were head injuries, 250,000 with fractured skull. There were 112,000 *deaths* from accidental injury, of which 16 percent or 18,000, were from head injuries. Next to injuries of the trunk, trauma to the head is the most frequent source of fatalities. Another 13,000 head injury cases sustained permanent disability and 7,000 temporary disability. The cost of accidents in 1967 is estimated at $21 billion, of which approximately $2 billion was the result of head injuries.

Looking at the causes of the accidents and the resulting costs, we find that 56 percent were due to motor vehicles, 24 percent to trauma incurred at work, and 12 percent originated in the home. The costs included medical expense, wage loss, and insurance administrative expense. (The latter figure for head injuries was more than $330 million.)

Skull fracture mortality may be as high as 70 percent, with about 30 percent early mortality compared with 10 percent in non-fracture head injury cases. Of the fatal injuries, 40 percent die within 6 hours and 60 to 70 percent within 24 hours. Children have a 50 percent better chance than adults of surviving from skull fracture.

A study of the part of the body injured in work accidents in 1967 was carried out by state labor departments. In that year, disabling work injuries in the United States totaled 2,200,000. Of these, 14,200 were fatal and 90,000 resulted in some permanent impairment. The total compensation paid to all workers in the nation who are under compensation laws was approximately $2 billion in 1966, of which $665 million was for medical and hospital costs and $1,300 million was for wage compensation. The amounts paid out were divided as follows: by private carriers $1,257 million; by state funds $454 million; by self-insurers $264 million. Head injuries accounted for 7 percent, or 140,000 cases, and involved $160 million or 8 percent of all compensation.

Assessment of the sequelae of head injury involves careful evaluation of the pathological changes. Macroscopic damage to the brain includes hemorrhage, abscess, and tissue destruction. Microscopic changes may take the form of petechial hemorrhage, altered cerebrospinal fluid pressure, or cell degeneration. In addition, the factor of emotionalism enters into any consideration of the cause of syncope, headaches, dizziness, and personality changes.

Insurance payments against the hazard of accidents were originally made by ancient guilds and friendly societies in the historical past. The protection so offered was erratic and unreliable. In the mid-seventeenth century the British government provided indemnity for the soldier's loss of an arm, a leg, or an eye. The coming of the railroad emphasized the need for accident insurance, and in 1849 the English Railway Passenger Company was

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organized. In the United States an insurance company was founded in 1873 to insure travelers and provide policies for all accidents. The same company in 1904 wrote the first double indemnity policy which guaranteed to pay double in the event of accidental death. The dramatic feature of this idea—the chance to collect $1,000 for a dollar or two—appealed to the public and "D.I." rapidly became a popular addition to life insurance contracts.

The scope of this paper will permit mention only of the various insurance lines that impinge upon the accident and disability field. Protection against disability costs exists in 10 different forms, only one of which is purely accident insurance. The list is as follows:

1. Federal insurance programs, including veterans benefit plans, Social Security, and Medicare.
2. Workmen's compensation insurance.
3. Mutual-aid plans, employing contract group medical practice, e.g. Northern Pacific Railway Beneficial Association.
4. Labor union plans.
5. Prepayment service plans—by hospital associations, clinics, Blue Cross, and Blue Shield.
6. Compulsory cash sickness plans like those operated by the states, such as the Rhode Island Cash Sickness Compensation Act of 1942.
7. Employer's liability insurance.
8. Medical payments insurance (under liability-insurance contracts such as apply in automobile insurance).
9. Disability benefit clause in life insurance.
10. Accident and health insurance:
    a. Individual policies.
    b. Group policies.
    c. Industrial—weekly premium.
    d. Travel ticket.
    e. Special contracts such as Lloyds'.

For our purposes the types of benefits can be divided into three main categories: (1) death, (2) weekly indemnity for loss of income, and (3) medical expense disbursement.

1. *Fatal accident coverage* is usually sizable, particularly in employee groups, in which it ranges from $25,000 to $100,000.

2. *Disability income weekly indemnity* can be payable up to a maximum of one to five years, commencing with the first day. A rather common form might be $150-a-week disability income, payable up to a $25,000 total.

3. *Medical expense reimbursement* is normally written on a blanket basis, covering hospital and physician charges, with upper limits ranging from $500 to $5,000.

Workmen's compensation is provided by state governments, primarily as accident indemnity. The idea of payment for occupational injuries originated in Europe (specifically in Germany under Bismarck in 1884) some 25 years before it won acceptance in the United States. The legislation involved a new legal concept: employer's liability without regard to fault. This first applied to only a few most hazardous occupations (e.g. mining, quarrying, municipal construction in Maryland in 1902); there was a gradual extension to most industrial exposures. The laws of the individual states show a striking dissimilarity, though all have as central objective the provision of benefits to workers injured in industry without question as to employer fault.

Major medical expense insurance developed after 1950 to meet the need for protection against catastrophic medical expenses. The policy usually carries a "deductible" clause, typically $200 to $1,000, whereby no payment is made until covered medical expenses for the accident have exceeded the deductible amount. There may be a limit on the period of time, such as 3 to 12 months, during which expenses must be incurred in order that the deductible qualification may be satisfied. In most policies the benefit is based on the expenses incurred because of a single accident and is limited to a stated period, such as two years following the date of accident. When the stated period has elapsed, the deductible must again be satisfied before further benefits are payable. The deductible tends to eliminate duplication where the insured has basic hospital-surgical coverages. The total benefits payable usually may not exceed a maximum benefit of $20,000. A "coinsurance" feature may provide that, in addition to the deductible, the insured will pay an agreed portion of the remaining amount, usually 20 percent.

Medicare, known as Title 18 of Federal Social Security Amendments of 1965, involving benefits to those over age 65, created immediate problems for the insurance industry because of the threat of massive overinsurance through widespread duplication of benefits. When the federal law suddenly became a reality, most companies revised their individual portfolios so as to discontinue policies duplicating Medicare. Three different methods were then developed by the industry to provide various forms of coverage supplemental to Medicare:

1. Benefits of broad scope involving a general *exclusion* of any expenses eligible for reimburse-

ment under Medicare. This is of significance in relation to Part B of Title 18, which provides coverage for doctors' and surgeons' fees on an *optional* basis.

2. Benefits designed to cover, specifically, various expenses not covered by Medicare.

3. Benefits which may duplicate those of Medicare to some extent but which are provided on a limited basis.

Medicaid, or Title 19, deals with federal grants to states for medical assistance programs. Since it does not create a clear-cut plan of benefits taking effect at a specified age, as does Medicare, the potential danger of duplication of voluntary coverage is enormous. It may be fairly asumed that Medicaid will pay *after* existing insurance benefits are paid, but control of this new scheme is proving to be most difficult.

Section 303 of the Title III Amendments liberalized the definition of disability. Disability considered "to be of long-continued and indefinite duration" was changed to disability which "has lasted for a continuous period of not less than 12 months." The hazard of overinsurance is greatly increased by this change.

The growing problem of overinsurance became increasingly apparent in the late 1950's. The steady growth in the percentage of the population covered by some form of medical expense insurance and the rise in popularity of major medical benefits led to an increase in the number of instances in which benefit payments from multiple coverage exceeded an insured's loss. Insurers were concerned because overinsurance increased the frequency and duration of claim. Worried physicians and hospital administrators noted a tendency for overinsured patient to prolong their hospital stays, thus aggravating the bed shortage problem.

Various types of regulatory provisions have been suggested as a remedy. The guiding principle is to limit disability income benefits whenever the total income under all policies of disability income insurance exceeded a certain proportion of the insured's earned income prior to his injury. A difficulty in administration of an overinsurance clause lies in the dependence upon the honesty of the claimant in reporting the existence of other insurance.

In the case of major medical expense insurance, overinsurance can be avoided by writing a benefit that, in effect, pays only losses in excess of the benefits under other insurance.

Prevention of overinsurance due to Medicare, Medicaid, or Veterans Administration care can be implemented by an exclusion clause reading as follows:

> This policy does not cover the costs of care, services, or supplies to the extent that such costs are covered under any national, state, or other governmental plan which is not limited to civilian governmental employees or their families.

Head Injury Cases

The acceptance of head injury cases for life or health insurance is based on judgment which in turn reflects clinical data. In cases of serious injury a one-year recovery period is imposed before acceptance. By "serious" is meant fracture of the skull, some period of posttraumatic unconsciousness, or disablement of more than one month. Disability coverage is usually withheld for two years, or, in the case of very severe injury, eliminated indefinitely. A broad, general classification that has been adopted by a number of insurers is as follows:

A. No fracture, no unconsciousness, no disability.
B. Fracture, but not depressed and not comminuted; unconsciousness, but not more than 12 hours; disabled, but not more than one month.
C. Worse than B.

The action taken by the company would be as follows:

A. Life insurance accepted at standard rates without a waiting period; disability insurance accepted after one year.
B. After one year, life insurance granted with an extra premium of $10 per $1,000 for one year; after two years, disability insurance allowed in selected cases.
C. After one year, life insurance granted with an extra premium of $10 per $1,000 extending over several years; disability protection denied.[1]

In posttraumatic epilepsy of jacksonian type, the prognosis is usually favorable. Life insurance at standard rates is granted at standard rates if there have been no further attacks in the preceding three years. A waiting period of 3 to 5 years is usually provided before issuing disability coverage.

The New York State Workmen's Compensation Board (which may be considered representative) studied industrial accidents in 1965 and developed data as classified by the part of the body originally injured. The total number of cases was 113,196, and compensation costs, averaging $1,183 per case, totaled $133,854,487. Head injuries, including skull, scalp, and brain, totaled 2,723 cases at a compensation cost of $7.3 million. The cost of medical and hospital care was not included. On a *frequency* basis, head injuries occurred 3 percent of the time. The average award was $1,103, or 7 percent less than the overall average. *Extent of disability* is a generally employed classification indicating the severity of the injury. Looking at all compensable injuries in 1965, *temporary disabilities* accounted for the greatest number of cases (aproximately 58%). The awards in these cases averaged $304, about a fourth of the overall average. *Permanent partial disabilities* comprised 41 percent of cases with an average award of $1,987. *Permanent total disabilities* (162 cases) and *death* (726 cases) accounted together for only 1 percent of the total but had the highest average cost, amounting to 16 percent of the total compensation. The average death claim award was $21,050 and for permanent total claims was $33,919. A review of the head injury cases as to extent of disability is indicated in Table 1.

The disability benefit feature of insurance contracts is a relatively recent development, pioneered in 1896 by a Philadelphia company. In taking this step the industry provided the American public with the means to overcome the vicissitudes of poor health resulting from accident. The policyholder was furnished with an income and freed from the burden of paying further premiums while disabled.

The question of the semantics of disability estimation assumes importance in the determination of such terms as "total," "partial," or "permanent." The present definition of total requires that the insured be disabled due to bodily injury to the extent that it prevents him from performing substantially all of the duties of his occupation, or of any occupation for which he is qualified by education, training, or experience.

Historically, injuries to the central nervous system have tended to result in prolonged convalescence. Since most of the evidence of persistence of sequelae is subjective—headache, dizziness, diplopia, irritability—there has been an inclination on the part of the claim adjuster to be suspicious of authenticity, particularly where compensation for loss and insurance payments are being sought. The term "railroad spine" was a commonplace to senior practitioners of medicine as a synonym for malingering by victims of an accident for which the railroad company was held responsible. Nowadays the claim adjuster trainee is warned lest his attitude become tinctured by suspicion or cynically influenced by the occasional excessive or fraudulent claim. He is admonished that he should have a real feeling for the humanitarian work of health insurance. He may have to repress a growing suspicion that in some cases the cure of symptoms is best accomplished by termination of payment of benefits. Especially is this true in these days of multiple coverage and overinsurance.

In recent years there has been a swing to more sympathetic philosophy, based in part on the results of emphasis on early rehabilitation and a more detailed study of the victims of trauma. In 1968, a paper was published on the examination of the stereotype of spinal injuries. Attention was drawn to the claims of patients with spinal injury who were possibly assuming the "sick" role to escape normal responsibility or to achieve the benefits concomitant with illness. It was argued that if the spinal injury patient is truly reflected in the popular stereotype, he would be expected to be characterized by qualities of the malingerer: emotional instability, vocational instability, job dissatisfaction, lack of work motivation, and poor job performance. A group of disability complainants with spinal injury was subjected to intensive study and testing and compared to a similar group with different disorders. The result of the investigation was that on none of the above-listed negative characteristics was there any evidence that the spinal cases fitted the stereotype. In general, they did not differ at all from other disability applicants on the characteristics mentioned. The authors conclude that there is unmerited suspicion of applicants for benefits under the workmen's compensation or Social Security programs. Apparently it is the few who have made the reputation for the many.

TABLE 1

EXTENT OF DISABILITY IN HEAD INJURY CASES

Part of Body	*All Disabilities*	*Death*	*Permanent Disability* *Total*	*Partial*	*Temporary Disability*
Brain	1,508	22	7	225	1,254
Skull and scalp	785	80	4	213	488
Head (not elsewhere classified)	430	7	—	60	363

A similar result might conceivably attend a study of the victims of head injury sequelae.

The insurance industry has a well-defined obligation in the field of rehabilitation. Recognition is given to two separate and distinct but closely related programs: (1) physical rehabilitation and (2) vocational rehabilitation.

Rehabilitation

Physical rehabilitation starts with the administration of first aid immediately following injury and continues with the provision of the best available medical, surgical, and other specialist care. There may be involvement in occupational therapy, mental conditioning, speech training, vocational counseling, and advice on the activities of daily living. Continuing neurological supervision is recommended. These needs may be best met in centers with a staff which understands the patient's temperamental difficulties and impaired intellectual functions. The one percent of cases who develop posttraumatic epilepsy must be carefully managed through medication where possible.

Vocational rehabilitation may be a necessary supplement and should begin as soon as the determination has been made that the disability will interfere with employment. Insurance has a threefold purpose: to prevent loss of employment if possible, to minimize the extent and duration of disability when it does occur, and to compensate for any monetary loss which is experienced by the patient. The *philosophy of rehabilitation* should not be limited to furnishing aid to the individual after all else has failed. Rather, rehabilitation must be a positive and primary consideration from the very beginning of the occurrence of an injury. Emphasis is on the concept of the "whole man" with the ultimate goal of return to a normal, useful life. Insurance company experience is that with each passing week or month a greater fixation of disability occurs, with a lessened opportunity for restoration of function. There is statistical evidence that the earlier the rehabilitation is undertaken, the shorter the time required to achieve best results. A series of 5,017 cases involving two groups of workmen's compensation individuals, reporting from two rehabilitation centers, were compared. Where there was a 23 percent reduction in the time between the injury and the commencement of active rehabilitation, there occurred a 36 percent reduction in the time required to reach the maximum result.

In any program of rehabilitation the attending physician is the key factor. He is most important in the early evaluation of the case, and the insurance carrier must work with him in coordinating all persons and facilities. The carrier's program aims to provide the best in realistic rehabilitation and to allow the injured man to understand and reach his potentialities physically, mentally, socially, and economically. The presence of adequate insurance financing can be a major factor in bolstering the morale of the accident victim as he strives to overcome his disability.

Traumatic Neuroses

Head injury may produce intense anxiety with acute and chronic maladaptive behavior in a previously well-functioning individual. In the *acute phase* there may be a stuporous reaction, a near-freezing of the organism, with occasional flashes of impotent rage. The *subacute phase* is the period when the patient endeavors to master the overwhelming event by summoning his available defenses, manifest by repression, denial, and projection. There may be reexperiences in frightening dreams or vivid flashes.

In the *chronic phase,* the patient is observed to slip into a parasitic existence with anxiety and hysterical symptoms viewed as attempts to elicit pity. Elements of "compensation neurosis" may appear if secondary advantages, such as insurance payments, are in the foreground. If the patient had a dependency trait *before* the injury, there is more likelihood of chronic neurotic development. Karl Menninger has drawn attention to the aggressive and self-destructive tendencies in those who are accident-prone; these characteristics become more pronounced if the patients' dependent needs are not gratified.

Preventive therapy is essential in avoiding the development of the chronic phase of traumatic neurosis. Modern dynamic psychiatry must be challenged to the utmost if we are to prevent these patients from becoming chronic "beneficiaries" of insurance or welfare programs.

The term *"compensation" neurosis* was introduced by K. T. J. Rigler[2] in 1879 when he noted the marked increase in invalidism resulting from railway accidents following the passage of the compensation law in Prussia in 1871. The role played by desire for monetary reward was emphasized.

A similar increase in neurotic complaints after injury occurred in the United States when compensation laws were passed at the end of the nineteenth century.

In any injury a balance exists between the rewards accruing from an illness and the penalty of not being able to follow a normal life. Insurance payments may be the force whereby the individual is unconsciously pushed in the direction of a neurosis. There is not so much a conscious desire for monetary gain as a symbolic feeling of being sheltered and protected. The person who has not previously felt adequate to cope with the demands of a competitive world will be more likely to have his behavior modified by the promise of compensation. Having had his shortcomings aggravated by the injury, the indemnity is regarded as a guarantee and a defense against return to a stressful situation.

Does compensation neurosis clear up after financial settlement? Much variation of opinion is found when this question is posed, and the retention of objectivity is always difficult. From his broad experience H. A. Davidson[1] states:

> There is a common idea that once compensation is paid the symptoms vanish and the neurosis is cured. This does sometimes happen, but I know of more ex-patients who remained disabled long after the case was closed than ex-patients whose symptoms disappeared when the final check was received.

Some authors consider there is value in classifying compensation neuroses into subtypes.

Thorne and Kamman[3] have coined the term *attitudinal pathosis* to describe a primary pathologic attitude and secondary personality and environmental reactions. The injured workman may declare he is entitled to special consideration; he refuses to resume his former employment and insists on lighter work with shorter hours. He is not suffering from a pure neurosis nor is he malingering. Rather he has an attitudinal pathosis.

"Retirement" neurosis appears in the young healthy individual who may have concentrated all his energy toward achieving an independent income. When he finally achieves his goal through insurance payments, there is a failure to enjoy his newfound leisure. He may, on the contrary, become neurotically depressed or hypochondriacal. Should insurance payments cease for any reason, the patient becomes incapable of making a new start and remains a failure. These individuals do not appear or feel ill; they simply have in their early years the same attitude which, if encountered in their sixties, would be considered normal.

Should compensation after injury be made in lump sum or monthly payments? The argument against the protracted method of compensation is that the patient is encouraged to continue his illness. On the other hand, some individuals tend to squander the lump-sum payment and subsequently become a welfare problem.

Beaudoux[4] followed head injury cases for 10 years and found that two thirds ran a protracted course. These cases, in the opinion, tended to be injured by lump-sum settlements, which wrongly assumes that no further expense is attached to the case.

Case Histories of Head Injury with Rehabilitation

1. A traveling salesman, age 39, because of increasing difficulty in coordination, was forced to give up work due to inability to operate his automobile. The diagnosis was multiple sclerosis. His training and experience did not equip him for inside work. His insurance policy provided $400 a month benefits to age 65 with a 52-week waiting period.

The patient was referred to a rehabilitation center for a 10-day evaluation, including detailed diagnostic tests. Careful history disclosed a minor head injury sustained several months previously. A subdural hematoma was discovered with subsequent surgical intervention. Psysiotherapy and reassurance returned the patient successfully to his former occupation before the end of the waiting period.

In summary, this was a case with a potential of over $100,000 in loss obviated by early recognition of the true diagnosis, with correct rehabilitation measures being instituted before further mental and physical deterioration had occurred.

2. A 35-year-old general surgeon received a severe head injury in an automobile accident resulting in partial paralysis of both upper and lower extremities. For one year he was hospitalized at a rehabilitation center and then released for further outpatient therapy while he undertook a residency in psychiatry. Upon completion of the residency training, he resumed a gainful occupation—as a practicing psychiatrist in his hometown.

3. A 14-year-old boy, while diving in shallow water, sustained head and spinal cord injuries, resulting in paralysis of both lower extremities. The insurance carrier, following primary therapy, with the permission of the attending physician and the parents, arranged for transfer to the industrial rehabilitation department of a specialized hospital. Though at first completely dependent upon others for care, after two years the boy was able to return to his home on a largely independent basis. Arrangements were made with the local school sys-

tem to provide home-teaching. Eventually he was able to function successfully as a radio announcer at a substantial salary. The rehabilitation program made the difference between the patient spending the rest of his life in a general hospital or nursing home and being able, on the other hand, to return to his own home and eventually to assume gainful employment.

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Richardson on HMOs

Given the execellent record of HMOs, it is curious that they have not been more popular. One reason for their slow growth, I believe, is that Americans revere their family doctors. The solo practitioner who would make house calls at distant farms on stormy nights is now part of the mythology of my country. If this form of personalized care were a reality in the past, unhappily it is exceedingly rare today. In fact, the number of general practitioners in traditional family practice has declined precipitously over the last twenty years. In 1949, there were 95,500 general practitioners, but by 1967 there were but 71,500, an absolute decline of 25%. The relative decline—the number of general practitioners for 100,000 people—was even more precipitous, from 53 to 36 per 100,000, or a drop of 45%. During the last five years or so, I should add, the total number of practising physicians has been increasing by about 2.5% a year, or at a rate 2.5 times as fast as population growth in the United States.

In a few years we will not have enough family doctors to place on those marble pedestals we have created for them. The consequence for the patient is long hours in waiting rooms, unavailability of doctors at night or on weekends, and long drives to the wealthy sections of cities or suburbs where these doctors have their offices. But HMOs can help to overcome all of these difficulties through efficient use of the doctor's time. In HMOs, paraprofessionals handle such tasks as routine inoculations. Professional business managers deal with time-consuming record keeping and billing. Doctors, working as teams, arrange their schedules in such a way that some one is always on duty but no one works to the point of exhaustion. But because the American patient has been raised to believe that the solo, private practitioner is the only source of good health care, these benefits and efficiencies have not gained sufficient currency.

Elliot L. Richardson

The strength and shortcomings of the US system of health care and its future development under proposed legislation, in *Anglo-American Conference on Medical Care.* The Royal Society of Medicine, London, 1971

Connecticut Medicine

Editorials

Genetic Counseling: A New Branch In Medicine

Genetic counseling has moved out of its childhood into a period of fast growing adolescence. Advances in genetic knowledge, increased public demand and refinements in amniocentesis probably help to account for the sudden spurt. At present in a practical sense there are three aspects to this new branch of medicine. One is the need for some parents to know whether their expected offspring will be born normal and free of lifelong disabilities, diseases or handicaps. This poignant question is uppermost in the minds of some expectant parents and their families. It is particularly troubling to parents of children with genetic disorders who are concerned with the risks involved in having additional children.

An example, is the young couple, the parents of a child with mongolism, who were fearful of the present pregnancy lest they have another retarded child. Amniocentesis was advised to resolve the dilemma. The fetus was found to have a normal chromosome compliment. The parents were so advised and six months later a normal baby was born. For the six months the minds of the parents was set at ease by the geneticist.

Genetic advice usually requires a detailed review of the family history as well as a clinical and laboratory examination of the patient and if need be, the relatives. Examination of the family lineage alone may provide insight into the way in which a genetic disorder is transmitted even without a complete understanding of the disease. Once the facts are gathered both the parents and other involved family members are given an explanation of the genetic risks. On the basis of this information the potential parents can make intelligent decisions on whether or not to refrain from parenthood or if already parents, from having additional children.

Genetic counseling is also particularly concerned with relieving feelings of guilt regarding the affected child. Discussion of genetic factors of disease can help parents who often believe that some action on their part has brought on the disorder, to fully accept and comprehend the facts. In addition, many genetic disorders present complex problems in terms of emotional and intellectual acceptance as well as in regards to treatment and rehabilitation.

Thirdly because of the widespread prevalence of the problem, the genetic counselor also counsels parents as to how to behave once a Mongoloid has been born. The counselor can bring new hope to distressed parents with genetic problems and can help to assure them that their children, normal or defective, should have every chance to be as healthy and functional as possible.

The demand for information is the result of a higher level of average education as well as a greater concern expressed through mass media about the genetic effects of radiation, drugs and viruses. Genetic counseling institutions such as the Joseph P. Kennedy Foundation affiliated with the Albert Einstein College of Medicine in New York are offering screening and genetic counseling in such areas as sickle cell anemia of

THE COVER

SUSRUTA: SURGEON OF OLD INDIA

SUSRUTA, famed Hindu surgeon, is depicted in the home of a noble of ancient India, about to begin an otoplastic operation. The patient, drugged with wine, is steadied by friends and relatives as the great surgeon sets about fashioning an artificial ear lobe. He will use a section of flesh to be cut from the patient's cheek; it will be attached to the stump of the mutilated organ, treated with hemostatic powders, and bandaged. Details of this procedure, and of Suśruta's surgical instruments, are to be found in the *Suśruta-samhitā,* ancient Indian text. Plastic surgery was practiced in India more than 2,000 years ago.

which there are 2 million blacks and many more carriers. Out of such institutions should come new knowledge and educational opportunities for future counselors to engage in accurate diagnosis, estimation of the probability of recurrences and the correct way to help the family to reach a decision.

There appears little doubt that as the numbers of metabolic disorders presently and potentially diagnosable in utero continues to grow, more individuals will be determined to be at risk for genetic diseases and more fetuses will be diagnosed as defective. We are thus faced with what should be the response of society to genetic diseases and defect. Thus far, there is no general agreement on this problem.

At a recent symposium[1] J. V. Neel of Michigan presented four possible criteria for setting priorities dealing with genetic counseling. First was a reduction of the proportion of persons with genetic disease. Second was striving for improvement in the expression of existing genotypes. Third was striving to create genetically superior individuals. Fourth was to protect the present gene pool by a world population policy. He and others, however, held that we are not yet scientifically, ethically or socially in a solid enough position to make wise choices among the possible priorities.

Where is the future likely to take us in genetics? Future developments are held to be an opportunity according to R. L. Sinsheimer at the same symposium. Higher states are possible for the human species in the intellectual, emotional and moral spheres. The price of not pursuing them would be to stagnate in fear and doubt. Some agreed, others did not.—L.H.N.

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Adverse Reactions From Beer

A few years ago beer drinkers were shaken by a report from Quebec of the occurrence of a series of heart failure patients in beer drinkers. The offending agent was found to be cobalt which was added to improve the "cap" on a glass of beer. After this practice was discontinued beer drinkers were relieved and returned to their pastime. But there is always something new to be learned about drugs even such an old one as beer. Two reports last year in *Lancet* describe two new adverse reactions.

The first was that of an electrician from Glasgow suffering from abdominal pain, nausea, vomiting and melena. He had been brewing lager beer at home with a do-it-yourself kit, highly popular in these days of inflation. Unfortunately, he had imbibed most of the five gallons he brewed over a period of three weeks. A few days after admission to the hospital, gastroscopy revealed erosive gastritis as the cause of his trouble and the finger seemed to point to the home brewed lager as the cause.

The authors, G. O'Keene, et al (*Lancet* 2: 795, October 9, 1971) investigated further by brewing some lager themselves and gave batches of guinea pigs to drink for a few days either tap water, home brewed beer or home brewed lager. They found that the lager and the beer induced gastritis and many bleeding points on the gastric mucosa. The water, of course, did not. They further found that when animals were also given lager or beer by intubation into the stomach, it seemed to them that the lager was more irritant than the beer, probably because it contained more acetaldehyde and acetic acid.

As if this were not enough to frighten beer drinkers, a second report from Belgium (where ardent beer drinkers abound) by Demarest, et al in *Lancet* 2: 1115, November 20, 1971, is also scary. They encountered 12 patients with a neurological syndrome due to hyponatremia with disorders of consciousness and occasional focal signs (epilepsy, extrapyramidal signs, focal palsy and hemiparesis). In each case there were several obvious causes for the salt depletion found, diuretics in 8, diarrhea 1, vomiting 7, and insufficient intake of sodium in the diet in 6. But the most remarkable finding in the seven patients with the lower sodium levels was of excessive beer consumption.

These persons were drinking at least four liters of beer per day and continued consuming this amount until shortly before they were admitted to the hospital in hyponatremic coma. In most cases there were no signs of intracranial hypertension, in either the fundi or cerebrospinal fluid and the condition responded to the administration of adequate quantities of sodium.

The authors suggest that water intoxication is more common as a cause of coma than one might think and that excessive beer drinking often contributes to the condition. The most important point they make is that in all patients with observed disorders of consciousness, estimations of serum sodium is as necessary as that of blood glucose or blood urea.

Apparently, it is possible by rapid administration of sodium to save some patients who are already in coma or convulsions. We must remember that not all patients can be saved even if their sodium levels are restored since 4 patients died in the hospital.

At any rate, adverse reactions to beer did not cease when cobalt was removed from beer after the Quebec epidemic. We must still look upon beer as a drug.—L.H.N.

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Science Tools: Continuous Flow Blood Centrifuge In Plasmapheresis

Without doubt the therapeutic use of phlebotomy and plasmapheresis will continue to expand and plasma exchange when properly employed will continue to save lives. Whenever the plasma contains a substance or cell which threatens health or life the obvious approach is to remove it. In hepatic coma, in cases of poisoning, in thyroid storms in which the system is flooded with thyroxin, in cases of immunologic deficiencies in which a healthy donor may provide "normal" levels of, for example, circulating gamma globulin deficiencies, plasma exchange is coming to be a life saving procedure.

Plasma exchange is defined as the removal of plasma with the return of the patient's packed red blood cells with donor plasma or plasma fractions. Whenever possible it is preferred over whole blood exchange transfusions because it avoids both the hazard of erythrocyte incompatibility and, in addition, if heat treated plasma fractions are used (albumin and purified protein fractions PPF) the added risk of hepatitis is eliminated.

Plasma exchange in addition to indications above can be used in individuals with hereditary angio-edema who have a deficiency of the normally occurring inhibitor of esterase activity. Plasma exchange provides levels of this inhibitor, reduces edema, eliminates abdominal pain associated with those episodes. The procedure may be used in hemophilia in emergency situations where no adequate source of anti-hemophilic factor is available. It can also be used in other coagulation disorders such as deficiency of Factor IX (such as plasma thromboplastin component-Christmas Factor) and von Willebrant's disease.

There are, of course, hazards connected with this procedure but if therapeutic plasmapheresis is carried out on an individual basis many hazards may be avoided. Quantitation of immunoglobulin and albumin are simple laboratory procedures, are performed frequently as guides for safety and efficiency in plasmapheresis. When citrate is used there is reduction of ionizable calcium due to the chelate binding effect of the anticoagulant and may be overcome by 2 ml. of 10 percent calcium chloride for each unit of citrates, plasma or blood infused. Hypocalcemia is readily recognized in the electrocardiogram. Occasionally commercial gamma globulin is necessary (IgG) when plasmapheresis is prolonged or intensive as in hepatic coma, acute poisonings and hypoglobulinemic syndromes where susceptibility to infection may already be a threat.

An important new tool, a continuous flow blood centrifuge is now commercially available and in a closed system is able to separate whole blood into erythrocytes, leucocytes, platelet-rich plasma and plasma. In this system blood is drawn from one vein of a donor, passed through the centrifuge which separates the desired fractions and the rest returned to a donor by another vein. In this way large amounts of separated blood components usually from a single donor can be drawn without harm to the donor.

More recent work involving HL-H typing systems suggest that by using a "matched" donor, usually a family member, transfusions of leucocytes or platelets may be given over prolonged periods without the usual development of reactions and antibody formation.

Originally this centrifuge was designed to permit collection and separation of large numbers of leucocytes in leukemia. However, the concept of continuous flow separation has been expanded so that its application as a method of continuous plasmapheresis may yet become its most important application. It is particularly useful where rapid removal is of paramount importance. It provides "in-line" exchange resins and/or membrane filters.

The future uses of therapeutic phlebotomy and plasmapheresis appear to be relatively unexplored. From studies reported to date phlebotomy and plasmapheresis with or without replacement therapy should be considered whenever undesirable immune mechanisms are involved and when noxious agents must be removed from the circulation. It is not too imaginative to visualize using the technique in auto-immune disorders, the hemolytic uremic syndrome, systemic lupus erythematosus, idiopathic thrombocytopenic purpura, when more conventional treatment requires supplementation or proven ineffective. Finally, in patients with preformed antibodies as in pregnancy and advanced renal disease, plasmapheresis may prove to be the only way to remove these undesirable proteins.—L.H.N.

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A Stable Society In Harmony With Nature

The increasing dangers of all kinds of pollution and the fear that overpopulation and the contamination by present industrial methods may eventually exhaust the world's material resources are topics that have received much publicity in recent years. Some foresee doom and as a result a conservation group called "Movement for Survival" came into existence recently with the support of more than 30 eminent people in medicine, economics and the biologic, physical and natural sciences.

In a remarkable symposium in the Journal *Ecologist*[1] entitled "A Blueprint for Survival" the authors express the belief that the principal defect of the industrial way of life with its ethics of expansion is that it is not sustainable. They believe that it will inevitably end against our will in a succession of famines, epidemics, social crises and wars unless we decide to bring about a series of thoughtful, humane and measured changes and so create a society that will not impose cruelty and hardship on our children. Furthermore, they believe that a growing number of people are interested in the latter choice but they emphasize the point that radical change is necessary, because the present increase in human numbers and per capita consumption, by disrupting ecosystems and depleting resources are undermining the very foundation of survival.

The authors urge that we try to understand the principles of ecology, the most important being that the environment is predictable and that all ecosystems tend toward stability. There are stable systems in nature. An example is the tropical forest which supports innumerable insect species and yet is never devastated by them; its rampant luxuriousness is not contingent on periodic bombardment with insecticides, herbicides or fungicides. We have come to rely on such pesticides in an effort to improve our agriculture but they have now created their own problems both of resistance and of pollution.

The authors remind us that complete destruction of the ecosphere is not necessary to bring catastrophy upon ourselves. All that is necessary is to continue clearing forests, reclaiming swamps and imposing sufficient quantities of pesticides, radioactive material, plastics, sewage and industrial wastes upon our air, water and land systems and then make them inhospitable to the species on which their continued stability depends.

Apart from the danger of failure of food supply as the authors point out, the known reserves of all but a few metals will be exhausted within 50 years if consumption should continue to rise. Synthetics and substitutes, they hold, will be of little help since these are made from already scarce materials. Even availability of unlimited power would hold more of a threat than a promise since energy use is inevitably polluting. And so the authors see not only the threat of famine and epidemics but the eventual collapse of society with an increasing frequency of antisocial practices, crime and delinquency as long term consequences of ignoring the basic laws of nature by constantly seeking to expand the economy rather than achieve a stable society in harmony with nature.

There are others who take a less gloomy look at it all. They think it unlikely that scientists could forecast the interactions of forces that shape civilized society with any greater precision than have the economists or sociologists. They hold that as material resources become scarce and costs rise, the search for substitutes is automatically intensified to postpone the day of reckoning.

In spite of the fact that the "Blueprint for Survival" contains some scientifically questionable statement of fact and highly debatable short term and long term policy proposals, many have welcomed the document as a major contribution to current debates. All have affirmed the gravity of the growing ecologic crisis and they are specifically agreed that it is a matter of urgency to stabilize populations and especially for developed countries to formulate their population policies. It is the developed countries that make for greater demands on scarce resources and create greater pollution per capita than do the people of the rest of the world.

There are already some signs of ecologic progress as a result of the concern generated by Ecologists. The air over London and many other cities is far cleaner than it was 20 years ago. In spite of the problem of pollution by industrial effluent, the river Thames has recently been reinvaded by fish. In many agricultural areas fertility is increasing and pests are coming under control. So that even though we are failing to use all our resources to control pollution and feed mankind, at least in the short run we have many of the answers to these problems. At the same time, as Lister points out[3] we have no reason for complacency. We must eschew all types of pollution that permanently degrade the environment and certainly we must be more provident with our resources.

These are all enormous problems requiring to be tackled with all possible urgency. Mankind must learn from its successes and from its failures so as to achieve more success in the environmental field. We need to rely even more on the proper use of technology.

What especially do we need to know is what are the essentials of a stable society in harmony with nature. With such a model in mind we can then proceed with funding and technology to bring this ideal about. There will have to be generated a strong will in this direction and a powerful force generated in the direction of social action. If a "Blueprint for Survival" will lead to this it will have helped for civilization to survive. —L.H.N.

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Hazards Of Medication

North American and European sources indicate that the incidence of adverse drug reactions in hospitals varies from a low of 5 to 9 and a high of 35 percent depending on the intensity of the monitoring. There is evidence to suggest that the actual peak may be considerably higher. By conservative estimates 20 percent of patients in Canadian hospitals suffer from undesired reactions to drugs, a figure which may also be too low.

Five percent suffer from drug reactions at the time of admission to a hospital. In the hospital an average of 8 to 9 drugs per patient gives an inadequate idea of the possibility of drug interaction. An hour or two of chart perusal in most hospitals will uncover instances in which individual patients have been exposed to as many as 30 to 40 drugs during a single admission. About 5 percent of all drug exposures are associated with adverse events and life threatening situations have been recorded in about 0.5 percent. In one group of monitored patients, drug attributed causes accounted for just over 3.5 percent of in-hospital deaths. The real figure may be much higher. A recent review of factors leading to death on the medical service of one large Canadian teaching hospital incriminated drug reactions in almost one-third of the autopsies performed.

The difficulty of studying this problem is emphasized in a recent editorial in the *Canadian Medical Association Journal.*[1] Comprehensive surveillance is thought to be too difficult. However, when identified by a drug adverse reaction control task force, the patient who has suffered a drug adverse reaction can be treated more rationally, effectively and safely than if the adverse reaction were to remain undetected. In such patients future reactions can be anticipated and avoided. The number of drugs in use is presently over 1,300. Clearly, so called drug failures are in fact antagonisms between concurrently administered agents. In like manner, unexpectedly high dose responses with increased toxicity are often due to synergism between compounds.

In this country the AMA has performed yeoman's service to physicians by extensive studies on adverse drug reactions involving many disciplines. Approximately 2 billion prescriptions are written and filled in the U.S. annually. Drugs with the highest adverse reaction frequencies include penicillin, 28 percent; sulfonamides, 13 percent; codeine, 6.5 percent; aspirin 3.5 percent and morphine 3.5 percent. The three highest classes of drugs that produce adverse reactions for million prescriptions for major drug categories include MAO inhibitors, fatal 10 to 0 and nonfatal 67.5; phenothiazine tranquilizers fatal 3.4 and nonfatal 3.7; tricyclic antidepressants fatal 2.4, nonfatal 26.0.

The scope of drug interactions is well covered in a manual on this subject.[2] Here we find analysis of 600 of the most widely prescribed drugs including the 200 most frequently described in this country. Interaction of drugs may displace certain drugs from protein-binding sites in the plasma or modify action of drugs at receptor sites. Enzyme induction and inhibition play an important role. For example, levo dopa can reach the brain because inhibition of its decarboxylase prevents the drug degradation in liver and kidney.

Inhibition of tolbutamide (orinase) metabolism by coumarins, phenylbutazone and other drugs induce hypoglycemia. Drugs such as the oral anticoagulants have especially been studied in drug interactants because they have characteristics such as plasma levels which correlate with therapeutic indexes. A multiplicity of mechanisms, however, are involved from absorption of vitamin K from intestine by use of mineral oil, by displacing the anticoagulants from secondary binding sites or increasing affinity of the anticoagulants for their receptors by use of clofibrate norethandrolone, and d-thyroxine or by use of aspirin quinine, quinidine which may inhibit the synthesis of vitamin K sensitive clotting factors.

MAO inhibitors interact with cheeses containing tyramine such as cheddar, Camembert, Stilton. However, tyramine is also found in kippered or pickled herring, Chianti wine, meat extracts, beef and chicken livers, fermented products and figs.

Drug induced reactions are not all due to medical subscribing, however. There is in our society not only the abuse of psychopharmacologic agents, but at a more innocent level a real problem that has aptly been described as "drug store abuse." By suggesting that there is a drug for every symptom of illness, the advertising media have further added and confused the sociological and cultural ideation. How few do not use caffeine or alcohol or nicotine as a base chemical that are expected to help one cope with the vissicitudes of living?

We certainly need an effective method of drug surveillance at least in hospitals. For without it the real cost of drug adverse reactions in bold terms of sheer preventable suffering and disability must surely in the long run become totally unacceptable.—L.H.N.

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Back To The Bedside: Elegant Digitalization I.

The bedside and office practice of cardiology has been neglected and is receiving less attention in training programs. This is largely due to great emphasis in recent years on procedures, surgery, coronary care units, cardiac and coronary catheterization charts and recordings and gadgetry of all sorts. One office and bedside procedure which has been neglected is palpation of cardiac impulse.[1] Another is the use of digitalis and diuretics in the management of congestive heart failure (CAF).

Literally hundreds of thousands of patients need digitalis at one time or another and as Burch points out[2] so few are properly or elegantly digitalized. In fact the incidence of digitalis intoxication has reached unparalleled levels in recent years and has caused the death of many people. For example, the incidence of digitalis poisoning has increased 2.5 to 14 fold over that of 30 years ago with death occurring in 3 to 39 percent of those intoxicated.[3] This unbelievably high incidence of course is because digitalis preparations now represent the fourth most frequently prescribed drug used by physicians in this country today.

To avoid this epidemic of digitalis poisoning, one needs to remember that digitalis preparations have not changed for years, that all contain alkaloids of one of the two plants digitalis lanata and digitalis purpurea. The whole leaf contains all alkaloids and the parenteral preparations contain a pure glycoside. The physician needs to be acquainted with at least one oral preparation and a rapid and slow acting parenteral one.

The basic principles of treatment of congestive heart failure consist of mental and physical rest, a bland diet low in salt, small frequent feedings, a sedative or hynotic agent at night for sleep if necessary and digitalis. The "rest" of heart and body should be instituted so as to reduce the demands and work imposed on the heart. If possible, the patient should take medications by mouth and should receive digitalis by mouth.

The practice in the U.S.A. today is to use digoxin. An analysis of its pharmacology reveals that this drug is certainly not the one of choice. In the first place, it is excreted (disposed of by the body) in about three days. Thus, if the patient excretes the drug in three days he will have excreted one third each day before the next daily maintenance dose is administered. Thus, with digoxin the patient is in a state of "elegant" digitalization for only several hours each day after the maintenance dose is given.

If cedilanid (lanatoside C) were to be used for digitalization the daily variation in digitalis level would be even greater than those for digoxin. Lanatocide C is completely excreted in 48-72 hours. Depending upon the rate of excretion, the patient will have excreted as much as 50 percent of the drug in less than one day, so that he would be in and out of digitalization each day if his maintenance dose were administered once daily. In fact, he would be "elegantly" digitalized only for an hour or two each day.

Obviously, to overcome such difficulties the drug must be administered at more frequent intervals and in proper doses each time. Even then the state of digitalization will vary considerably throughout the day. With such unknown variations in the rate of excretion by any given patient, it is not surprising that many patients are either underdigitalized or overdigitalized so that the state of ideal digitalization is rarely obtained.

For some peculiar reason, physicians consider the rapidly excreted digitalis preparations to be the drugs of choice because whenever toxicity results and the drug is stopped, the patient then escapes toxicity rapidly. That, of course, is an expression of inability to use the digitalis preparation properly. For when it is used properly, rarely if ever, is the patient overdigitalized or is there digitalis toxicity. With good practice there should be no digitalis toxicity. Some physicians even advocate administration of the drug to toxic levels, then reducing the dose until toxic effects disappear. This is a practice that is dangerous and can at times be fatal.

Burch points out that knowledge of three drugs are all that is needed to properly digitalize a patient. Cedilanid (lanatoside C) for rapid parenteral use, digitoxin for slow parenteral use, and tr. digitalis folia for oral slow use. With digoxin if by luck the initial digitalization is a success then by the time each maintenance dose is administered at 24 hour intervals the patient will be one third below the desired state of digitalization. With such a drug a smooth state is impossible and the physician cannot know what level of digitalization exists. The result is fluctuation from full adequate to over or underdigitalization. The magnitude of fluctuation can be reduced by half by administering half a maintenance dose at 12 hour intervals. With cedilanid the fluctuations are even more so.

Digitoxin or whole leaf of digitalis on the other hand, are secreted slowly requiring about 21 days for excretions of a full digitalizing amount.[4] Therefore, only 5 percent is excreted each day and, therefore, smooth maintenance of digitalis is relatively simple. But as with all preparations, the drug is not administered in arbitrary quantities. The dose is calculated on the basis of body weight and whether digitalization is to be slow or rapid.

A rough basis for calculating the dose is to give one unit (0.1 mg. digitoxin) 1 grain of digitalis leaf or 1 cc. of the tincture of digitalis per 10 pounds of body weight. Thus, if a patient weighs 150 pounds his digitalizing dose will be 1.5 mg. digitoxin, 15 grains of digitalis leaf or 15 cc. of the tincture. One now gives one half calculated dose immediately. In 6 to 8 hours, the time required for the full effect, the patient is examined carefully. Improvement in heart rate, respiration is noted, diuresis has started, lungs are clearer and neck vein distension is less but he is not fully digitalized.

It is now time to administer half of the remaining dose. Six to eight hours later the full effect of this dose will be manifest. Improvement in the patient should continue to be observed. The patient should now receive 0.1 digitoxin or 1 cc. of tincture and be reexamined in 8 hours. As full digitalization is approached slowly, the patient becomes symptom free. Again in 8 to 10 hours the patient may continue to receive another cc. of tincture or 0.1 digitoxin. When heart rate is down to 70 and patient continues to improve he is fully digitalized. Thus, at this time each dose is decided at each visit to the patient after careful examination and not by arbitrarily writing orders for several days in advance. (to be continued).—L.H.N.

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Back To The Bedside: The Meaning Of The Apex Impulse

If we had a non-invasive method which would at once reveal heart rate, right and left ventricular hypertrophy, right and left ventricular diastolic overloading and ectopic impulses without resorting to X-rays, electrocardiograms and other sophisticated methods of revealing hemodynamic alterations of the heart, we would consider using it promptly. The fact is there is such a method which has been in existence for centuries and can replace elaborate and sophisticated diagnostic techniques. It is palpation of the cardiac impulse, the simplest, non-invasive technique for studying cardiac function. All the information we have gained through angiocardiography, apexcardiography and even cardiac surgery, firmly supports the reliability of conclusions that can be drawn from palpating the cardiac impulse.

The left ventricular impulse, the point of maximum impulse (PMI) is actually generated by the interventricular septum striking the anterior chest wall as the heart tenses and rounds up during isovolumic contraction. Since the septum is largely composed of left ventricular fibers we can assume that the apex beat generally reflects left ventricular events. The left parasternal impulse on the other hand is uniformly created by the anterior wall of the right ventricle, therefore, it reflects right ventricular events. However, if either ventricle is greatly enlarged then the spatial relationships may be modified because of rotation around the vertical axis. Under these conditions any attempted identification of hypertrophy of one or the other ventricle as opposed to biventricular hypertrophy may be totally unreliable.

With the patient lying flat, the palpating hand can identify and evaluate the following characteristics: location, size, duration of outward thrust, amplitude of thrust, parasternal lift adjacent to the left parasternal border, which is the right ventricular impulse, and finally ectopic impulses.

Cardiac enlargement will be revealed by an apical impulse which is displaced laterally and downward from it normal location inside the midclavicular line in the 5th intercostal space. At times, it is not readily felt until the patient is in the left lateral position. However, before deciding there is enlargement the patient is placed back in the lateral position.

It is possible to detect not only cardiac enlargement but also the type of overload that caused it. In hypertrophy from hypertension or aortic stenosis there may be no actual enlargement. An important clue, however, is the duration of the outward thrust. The normal thrust lasts one-third of systole but pressure overload thrust last throughout systole. By timing the outward thrust and by listening and palpating simultaneously, it is easy to estimate the portion of S1-S2 interval associated with the thrust.

Volume overload, however, is produced in mitral insufficiency, aortic insufficiency, ventricular septal defect and arteriovenous fistula. In these instances, the heart enlarges and produces a PMI considerably below and outside its normal location. The impulse associated with a large stroke volume tends to be exaggerated in amplitude rather than duration. Thus, the volume overload can usually be separated from pressure overload. Of course, one must remember that mixed types also occur as cardiac disease progresses.

Right ventricular hypertrophy produces a parasternal lift which can be detected by placing the hand over the lower parasternal area and noting whether there is a sustained systolic lift of the entire hand. The degree of pulmonary hypertension will determine the duration of sustained parasternal lift. Just as left ventricular volume overloads produce exaggerated amplitude rather than sustained duration, so similarly does right ventricular flow loads produce exaggerated amplitude rather than sustained duration. It is interesting that assessment of the right ventricular lift appears to be considerably more reliable in diagnosing right ventricular hypertrophy than is the ECG.

Finally, is the ectopic impulse which may serve as a clue to ventricular aneurysm. Anteroseptal and lateral wall infarctions commonly produce an area of asynergy or frankly paradoxical pulsation with an impulse above and slightly medial to the normal MPI. At times the apex itself is part of the non-contractile zone and then one finds a ballooning type of apex with a late outward bulge.

It is simple to develop this technique and once developed will quickly reward one with reliable diagnostic insight into cardiac size and hypertrophy. But beyond this one can gain important insights into the heart's performance in terms of pressure and volume overload with hypertrophy. For example, if one finds an overloaded left ventricle in a patient who appears to have mitral stenosis in which the left ventricle should be underloaded, this is an alert for some additional lesion. A volume overloading is an expected finding in a patient with symptoms of mitral or aortic insufficiency. Suppose one finds a hypertrophied right ventricle in a patient with left sided disease, this at once indicates that the condition is chronic and has exerted a considerable hemodynamic load.

The final point to remember is that certain dynamic impulses appear in the volume overloads during pregnancy, excitement, fever and thyrotoxicosis. It should not be difficult to separate those from pathologic volume overloads by other physical findings characteristically associated with them. Going back to the bedside can be rewarding.—L.H.N.

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Some Thoughts About Older Persons

From the older person's point of view there should be an option to retire or not, depending upon his desires and abilities. In the Soviet Union says Dr. Roger O. Egeberg, a person arriving at retiring age has that choice provided of course there is a place where his skills can be utilized and there almost always is. If one continues to work he is not penalized as he is in this country by losing his social security pension. There he draws both full pension and full pay. This says Dr. Egeberg makes you the richest person in the family and "believe me it helps the rest of them to like you."

A study of aging at Duke University showed that 44 percent who were in poor health described their health as good or excellent. This means that we physicians need particularly to be sensitive to fears, denials and lack of understanding of principles of health and medicine that we assume everyone knows. When we examine an older person we need to appraise their broad attitudes, their memories, their philosophy. They have more problems and it is a challenge to us to make more observations and track down more symptoms. We must place more worth on the things they have to give, wisdom, memories. Obviously a man of sixty-five has less longevity than a boy of 12 but we still need to recognize the importance of providing what aid is needed to help all of us to live independent, fulfilling lives no matter what their ages are.

Some doctors seem to reflect societal attitudes. For example, a great many people think that sex among older people is somehow distasteful, immoral or amusing. The fact is, as Masters and Johnson have shown, that there are few physical reasons why it shouldn't be enjoyed well into old age. Dr. Alex Comfort has stated that some older people give up sex for the same reason they quit riding a bike, either they haven't got a bike or they think it looks ridiculous.

There appears also to be a confusion between aging and sickness. There is a confusion between two kinds of normality, statistical and pathological. The statistician says what is frequent is normal. To the pathologist normality has to do with function. Most everybody thinks old people normally deteriorate. This is not so. In a group followed between 65-75 cognitive function did not decline unless they had hypertension. We tend to think disease is normal in the aged. Not so, something must be causing the deterioration. One stereotype the Duke study has shown to be false is that "you can't teach an old dog new tricks." Not so. Old people can learn quite well if the material is presented not too rapidly. A physician must understand this and not betray impatience when what the patient really needs is understanding. The more mature the physician the more sympathetic he is to the aging patient.

About three-quarters of over 65 have at least one chronic illness, while about half have two according to Dr. Shanas. Yet most are not disabled. In fact, the Duke study found most are functioning well. Two-thirds report no limitations on their capacity to carry on the ordinary activities of life. Analyzing other data Dr. Palmore found that among every 100 aged poor persons, 40 needed health aids such as dentures, glasses, crutches were needed but not used. These are self-reported figures and are probably underestimates since many old people are not aware that they could be helped by such aids.

But wasn't Medicare supposed to take care of all that? Since Medicare became effective in July 1, 1966, the premium for part B coverage has risen 87 percent. About 15 percent of the recipients cannot afford to pay it at all. The part A deductible has risen from 40 to 68. A report of the Senate Special Commission on Aging calculates that the beneficiary who in 1966 had an operation that cost $400 in surgical fees and who spent 21 days in the hospital, plus 60 in an extended care facility would have paid out of pocket $396. This of course is providing Medicare paid for the surgeon's fee which it usually doesn't. Including Part B premium, in 1971, the same episode would have cost $563.60 again providing Medicare paid the surgeon's fee in toto which usually they don't and this leaves the patient with a heavier debt or a default to his doctor.

Medicare covers only 43 percent of the medical expenses of its beneficiaries according to Walter C. Newburgh, the second vice-president to the National Council of Senior Citizens. Because of inflation, the other 57 percent costs more today than the whole bill would have before Medicare. The patient is actually out of pocket more now than he was before Medicare. Taken together with Medicare's drastic reductions in payment to the patient of a doctor's fees for his services, it is obvious the administrators of Medicare are not operating for the benefit of the senior citizen. It is clear that Medicare has not dissolved the financial barriers between the doctor and his patient, that resistences to treatment have been created by Medicare because of limited return from Medicare as well as the limited income of some patients.

There are, of course, other barriers between doctor and aged patient. Simply getting to and from the doctor's office may be one. Their children have other responsibilities. Another is that the aged are less educated than the young. They may be too uninformed to recognize and evaluate serious symptoms as they arise. The aged are also more likely to rely upon quacks and nostrums.

The clinical problems in the aged are not much different than that among younger people and there are few diseases which are exclusive property for the old. Drug reactions may be different and some problems do need special handling. Addictive drugs should certainly not be withheld from old people if they are needed. Think of how helpful a euphoric pill would be to keep the very old out of a depression. A drug that is an intoxicant that would produce feelings of gratification without the drawbacks of alcohol would be a boon to the depressed old person. —L.H.N.

Reference

1. The problems created by medical progress. Med. World News, p. 42, April 7, 1972.

Carcinoembryonic Antigen In Cancer (CEA)

There is currently much interest in the immunological diagnosis of cancer. An antigen specific for adenocarcinoma of the colon was described by Gold and Freedman in 1965.[1] This antigen is present in tissue extracts from adenocarcinoma of the colon and in fetal colonic mucosa but absent in extracts of normal adult colon. Subsequent study by these authors showed this carcinoembryonic antigen (CEA) to be present in other malignant tumors of the gastrointestinal tract but not in any other tissue tested normal or abnormal.

With a radioimmunoassay capable of detecting plasma levels of CEA in the nanogram range described by Thomson, et al in 1969.[2] Gold was able to detect the presence of CEA in 96 percent of patients with primary adenocarcinoma of the colon. Accordingly he considers CEA to be cancer specific and specific for tumors originating in the gastrointestinal tract. Reynoso[3] with another procedure for detecting CEA now reports on 346 consecutive patients admitted to Roswell Park Memorial Institute. For controls they used 138 normal volunteers. Tumors originating in the GI tract constituted 57 of the total and 289 had tumors originating in other organ systems outside of the GI tract. Reynoso found a variable diagnostic incidence of CEA varying from 70 percent positive for carcinoma of the lung but only 30 percent positive in genitourinary tract malignancies.

In adenocarcinoma of the breast an important difference was found between patients with localized disease and those that had metastacized. In the localized cases 9 out of 10 showed no antigen. In metastatic disease 6 out of 10 did show the antigen. Thus it is possible that the test may be found useful in monitoring the presence or absence of metastases in the post-operative management of this cancer. Of particular importance from the diagnostic and prognostic point of view are the results in children with neuroblastoma, a finding not previously reported. All six with active disease had elevated CEA values and one case free of clinical disease was within normal limits. Three were treated successfully and the CEA level returned to normal. These findings are important not only because of their potential use in diagnosis and management but also because previously the antigen was described only for epithelial cell tumors.

There appears to be good correlation between the levels of CEA and the results of therapy in patients with colonic carcinoma. The adequately treated patients, the CEA returned to normal after surgery or chemotherapy. Accordingly serial determinations of CEA may be useful in following the course of the disease. If the CEA disappeared after resection of the tumor to reappear again later it signals need for re-examination and re-evaluation of the patient or the need to reintroduce a different mode of therapy.

This point is even more clearly demonstrated in the case of neuroblastoma. The CEA level may provide the "needed point of attack" for the treatment of recurrent tissue. A similar fact could, in fact, bemade for all the other tumors studied such as prostatic or bladder cancers, neuroblastoma and multiple myeloma except that in the latter case the incidence has been low. The plasma assay for CEA detects tumors of the GI tract with a high degree of reliability.

Whether or not the test will eventually be able to consistently diagnose preclinical disease remains to be established. But what is clear is that assay for CEA appears to be useful in the follow up of patients with cancer and may eventually be of diagnostic value in the asymptomatic patient—L.H.N.

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2. Hansen, H. J., et al.: Induction of an antisera monospecific for carcinoembryonic antigen, abstracted. Clin. Res. 19: 53, 1971.

3. Reynoso, G., et al.: Carcinoembryonic antigen in patients with different cancers. JAMA 220: 361, 1972.

Ethics And Biomedical Advances

Times seem to have changed since 1968 when Nobel laureate geneticist Arthur Kornberg testified before a congressional committee that he saw no new ethical or moral problems arising from advances in his field. At that time he thought that a commission on Ethics would have a value if it devoted its time and money in educating the public on the need for more research money for scientists. At the same time, Dr. Christiaan Barnard took a similar task. His remarks betrayed the assumption that attempts by any non-medical body to influence medical and scientific policies would automatically be repressive.

In the ensuing 4 years times have changed. Heart transplants are child's play compared to questions raised by advances in other fields, notably genetics which have transformed yesterday's science fiction into today's foreseeable reality. Amniocentesis has made it possible to detect certain genetic disorders such as mongolism and Tay-Sachs disease and certain chemical deficiencies in utero. In vitro fertilization of human ova has been achieved and scientists are working on reimplantation of an egg in the womb.

The ability to choose the sex of a baby is pending and cloning—that is, producing an individual genetically identical to the original individual may be possible technically in the not too distant future, some say in the next decade. Behavior modification is another field of equally rapid advances and stupendous implications. Both through chemistry and through electrical manipulation of the brain by the method of Delgado ways have been found to stimulate and control emotion, developments that have the press speculating about thought control and the imminence of *1984*.

Technology that indefinitely prolongs the life of the dying has raised questions as to the "right to die" and when to "pull the plug." Linked with this is confusion over allocation of scarce and expensive resources such as kidney dialysis machines.

The increased sensitivity to individual rights manifested over the past decade has caused a number of old practices to be evaluated. Sterilization of the hopelessly retarded has become taboo. Methods of obtaining "informed consent" for human experiments are being questioned and the denial of a life saving operation to a newborn mongoloid, a practice taken for granted at many hospitals for years, was the subject for passionate denunication at a recent symposium on ethics.[1]

A central issue in recent ethical debates has been abortion. Genetic advances and the rolling back of legal and religious prohibitions has turned the question of abortion into a forum for new attempts to define "life", "the right to life," the conflicting rights of interested parties in this case, the mother and fetus and even in the case of a grossly defective fetus, the right to be aborted.

A number of organizations that have recently come into existence are attempting to lay the groundwork through symposia and interdisciplinary studies for principles covering these matters. One is the 2 year old Committee on the Life Sciences and Social Policy of the National Academy of Sciences directed by biochemist, Leon Kass. This committee has been conducting studies in 4 areas: choosing the sex of the newborn, in vitro fertilization, behavior modification and aging.

Another is the Institute of the Society, Ethics and the Life Sciences of Hastings-on-Hudson, New York, which was set up by Daniel Callahan, a writer and theologian. The Institute has set up interdisciplinary task forces to conduct long-term studies on a similar range of subjects but also including population and the teaching of medical ethics. A third group, the Joseph P. Kennedy, Jr., Foundation, higherto primarily devoted to the study of mental retardation recently gave Georgetown University $1.3 million for the establishment of the Joseph and Rose Kennedy Institute of Bioethics which will provide "on the job" training for graduate students in ethics. This institute according to its director, Andre Hellegers, will be an unusual experiment in reuniting long-fragmented disciplines. Under one roof will be the clinical, scientific, psychological and sociological aspects of reproduction, genetics and obstretics.

Many people seem to think that the reunification of long-estranged disciplines will be the only way to ensure built-in sensitivity on the part of physicians and researchers to the implications of their work. "Ethics as a cogent force fell apart when it became divorced from other faculties," says Hellegers. It appears as though interdisciplinary barriers have allowed the legal profession to come up with laws that are theoretically sound but medically senseless and have left members of the clergy ill-equipped to offer advice on anything but religion.

There are still only a handful of universities across the country that offer courses with an interdisciplinary approach to ethics. The only full-fledged program we are told by Constance Holden is a 4 year course offered at Columbia College of Medicine. It appears that ethics seminars where available are increasingly popular with medical students.

The AMA gave attention to these matters through such forums as the biennial AMA congresses on ethical issues in medicine which began in 1966. In November, 1971, the AMA Judicial Council moved to arrange for a series of articles on euthanasia and genetic engineering to appeaI in the JAMA. This shows the concern over unanticipated an possibly irreversible developments that the future may have in store for medicine.
—L.H.N.

Reference

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Fifty Years Of Medicine

Part I.

Louis H. Nahum, M.D.

On arriving in New Haven I was a specialist. I had two weeks training in cardiology at the Rockefeller Institute under the then great Alfred Kohn. I was quickly deflated when I went to Milton Winternitz, the then Dean, to get an appointment to start a heart Clinic. He looked at me then glowered and said—young man there is no heart specialty—Come off your high horse—there is medicine!

In a way he was right but actually he was wrong. For how else could we collect information about heart disease without patients, special clinical study and clinical investigation. We already had the electrocardiograph which Einthoven invented in 1904. We had masterful texts by Sir Thomas Lewis, the mechanism and graphic registration of the heart beat. We had a wonderful study by Sir James MacKenzie on heart function and the polygraph to record the venous and radial pulse. There was also the first glimmering of an association devoted to the study of prevention and relief of heart disease. Small groups of cardiologists organized themselves —"The New York Association for the prevention and relief of Heart Disease". Then the New England Association for prevention and relief of Heart Disease. This became the American Heart Association in 1924. Of course the real title should have been American Association for the prevention and Relief of Heart Disease.

But I think Winternitz's suppression of my ego was not bad. I decided that since heart disease was basically physiology and therapeutics that perhaps I should go into physiology. Accordingly in 1926 I went to the then Professor of Physiology, Harold Himwich, and asked to be taken on for part time research. He looked at me as did Winternitz several years before and said—You are in practice? I said yes. He said it won't do, you can't serve two masters at one time! This time I was prepared. I said you are making an assumption and from this you are drawing a conclusion without verification! He was a bit startled. I had done my homework on the method of science. After this he couldn't refuse and he took me on. In a way he was right. To spend a good part of the day doing research, then practicing —it required a great deal of dedication. I would run to the Lab at off hours to do the blood estimations. I would make night calls instead of the day and I had to be in the Lab at 7 A.M. to have enough time. But I was very happy. We wrote many papers on metabolism. We established the glucose lactic acid cycle between muscle and liver. Our paper came out 4 months after Cori's on the same subject and for which they received the Nobel prize in physiology. We established that the fuel of the brain is glucose, that opened a new world in cerebral metabolism and pharmacology. We reported on liver metabolism, gland metabolism, heart metabolism.

By this time early in the 30's Himwich left and I had my own laboratory and colleagues out of which came numerous papers on arrhythmias and the meaning of the individual wave forms of the electrocardiogram.

One of the factors that led me into arrhythmias was a newspaper story. A worker was cleaning an empty benzol tank. The fumes were so heavy he was anesthetized. Two men who saw him collapse rushed in to bring him out. In the excitement one of the rescuers dropped dead. The unconscious one survived. Hebbel Hoff and I looked at each other as we saw this headline. Why did the rescuer die and the rescued recover? This led to a whole series of investigations and the final establishment of a theory on the role of the sympathetic and then the vagus in the genesis of various types of cardiac arrhythmias. Hebbel Hoff is now a famous physiologist, historian, scholar and administrator at Baylor University in Houston.

You can see active work was going on. We have a tendency to think that medical science was primitive then. True we had no hormones except thyroid. No antibiotics. Very little technology and what was a happy state—no threat of government, no demeaning of the profession in the press. True we had antisepsis—no puerperal fever. We had anesthetics though not as elegant as we have today. We had excellent surgery. True invasion of the cranium was primitive and of the heart undreamed of. We

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Address given to the New Haven Medical Association, April 19, 1972.

had but a few drugs, 6 or 7. But we had that priceless ingredient of medicine, the personal physician, the one to one relationship between doctor and patient. The people were happy with medicine and the physician was thought of as both healer and scientist, and highly respected.

In this connection it is well to recount Oliver Wendell Holmes concept of science in 1887. "With regard to the changes in the general conditions of society and the advance in human knowledge, think for one moment what fifty years have done! I have often imagined myself escorting some wise man of the past to our Saturday Club, where we often have distinguished strangers as our guests. Suppose there sat by me, I will not say Sir Isaac Newton, for he has been too long away from us, but that other great man, whom Professor Tyndall names as next to him in intellectual stature, as he passes along the line of master minds of his country, from the days of Newton to our own,—Dr. Thomas Young, who died in 1829. Would he or I be the listener, if we were side by side? However humble I might feel in such a presence, I should be so clad in the grandeur of the new discoveries, inventions, ideas, I had to impart to him that I should seem to myself like the ambassador of an Emperor. I should tell him of the ocean steamers, the railroads that spread themselves like cobwebs over the civilized and half-civilized portions of the earth, the telegraph and the telephone, the photograph and the spectroscope. I should hand him a paper with the morning news from London to read by the electric light, I should startle him with a friction match, I should amaze him with the incredible truths about anesthesia, I should astonish him with the later conclusions of geology, I should dazzle him by the fully developed law of the correlation of forces. I should delight him with the cell-doctrine, I should confound him with the revolutionary apocalypse of Darwinism. All this change in the aspects, position, beliefs, of humanity since the time of Dr. Young's death, the date of my own graduation from college!"

Science grows and as you look back it has made unprecedented progress. We had no control over infectious diseases, blood diseases, hypertension, thromboses, both arterial and venous or pulmonary embolism, coronary thrombosis, renal disease or stroke. We had no control over diabetes and endocrine disorders. We couldn't invade the cranium adequately or the heart. No pulmonary by-pass, no vascular surgery, no neurosurgery. We couldn't visualize organs and their blood supply.

Many of the discoveries lead to such unbelievable consequences, that they are definitely not possible to anticipate. For example, the conquest of infection lead to people living older. This increased the aging population. This led to many retired citizens. There are now 20 million of them. This led to social security. This led to old age institutions. This led to medicare and soon heaven forfend Socialized medicine, a complete transformation of our society.

Graham devised his gall bladder test in 1937. Could he anticipate the present era of a medical cure for gall stones.

Forssman showed it was safe to pass a catheter in his own median basilic vein up on into his heart. Could he have foretold that it would lead to heart chamber visualization, to arterial visualization in organs, to catheter pacing of the heart, to venous cannulation of organs such as brain, kidney, heart and others. Two weeks ago I saw a cannulation of the parathyroid vein to study hyperparathyroidism. Could he have realized that the knowledge so obtained would open up vistas of surgical intervention and repair of vascular defects, the radiographic instrument to assist, the blood analyses, the surgical tools, the specialized anesthesiology, the pulmonary by-pass and much more.

We see then that medical knowledge grew through congruence of two parallel lines of development, one is basic science and the other technology. Hand in hand we have revolutionized medicine and society as well. Society is no longer static since the introduction of the scientific method.

Actually medicine's chief value to society is not just progress in the healing of the sick but the part it played in the development of all of science and the creation of the scientific method. Copernicus and Galileo were both physicians. When I began my lectures in physiology I first introduced the class into the understanding of the scientific method by reproducing the steps William Harvey pursued in the discovery of the circulation of the blood. He asked himself a simple question, does the blood circulate or does it ebb and flow as was thought then. He observed that if he blocked a peripheral vein the central vein didn't fill. He let it fill only to have it disappear proximally. Then came the real point, calculation. How much blood does the vein hold? Say 3 c.c. filling and emptying constantly. He calculated that the total volume of blood was greater than the whole body mass many times in the course of 24 hours. This inescapable conclusion was only circulating blood could do this. The method a question, based upon an observation then an experiment and verification of the hypothesis has enriched man and caused enormous expansion in our knowledge and mastery of nature.

The true aim of a teacher in medicine as elsewhere is to impart an appreciation of how we arrive at truth rather than merely knowledge of facts. Facts have a half life of 6-8 years and are replaced by different facts. What questions we ask of nature, how we go about collecting data to answer the question, how to interpret the new data and how to discard a hypothesis and try another one to better explain the data, that is important. It is scientific reasoning that students must be taught in medical progress.

I now wish to speak of three instances out of many that I have personally experienced to illustrate how basic science contributes to clinical medicine.

The discovery of neurohumoral transmission. I heard Otto Loewe tell this story and it is in his little book, "The Workshop of Discovery". There was much in the literature about the effect of adrenalin on producing the same effects as stimulation of the sympathetics. How does the vagus slow the heart? Is it an electrical impulse that goes from nerve to muscle. Loewe pondered on this and how to perform a crucial experiment to prove whether nerves control muscle by an electrical or a chemical transmitter.

One night he awoke from a dream in which he conceived of a way to perform the crucial experiment. He scribbled the notes on a pad at his bedside and then he went back to sleep. The next morning, much to his dismay, he could not decipher the scribbling nor did he remember what he wrote. Needless to say he spent some uncomfortable anxious hours but to no avail. The next night he fell asleep, dreamed the same dream, awoke himself excited. This time he did not trust himself to write his note. At 2 A.M. he rushed to his laboratory and performed the experiment. It was as follows—He perfused a frog heart with saline while stimulating the vagus. He then took the perfusion fluid and with it perfused a second frog heart and caused cardiac arrest. He thus showed a chemical was liberated at the nerve ending in the heart which could act directly on the second heart. The chemical of course was acetyl choline and this led to the whole new field of neurohumoral transmission. Chemicals to produce or block the effects and an important area in pharmacology and therapeutics.

I heard this story from Dr. Best of Banting and Best when he was visiting the Department of Physiology here. In Jan. 1922 an 11 year old boy, Leonard Thompson, lay in the Toronto General Hospital waiting to die of diabetes. He weighed 65 pounds, gaunt testimony to the starvation diet doctors then employed as the only known means to delay briefly the victory of this killer disease. Leonard Thompson's case was to prove a medical milestone, however. He became the first diabetic patient to receive insulin then newly discovered by Banting and Best. Young Thompson's prompt improvement, release from the hospital and ability to live a normal life constituted the first miracle in this field, a miracle repeated millions of times since for diabetics in all countries.

This historic achievement has relevance for medical problems now under intensive discussion. The present tendency is to put into the foreground "practical" questions of organization and delivery of health care while minimizing basic research in the medical and related sciences. Leonard Thompson could have had all the world's greatest doctors of his time caring for him, the best of delivery of medical care then known but without insulin he would have died quickly.

Now, of course, diabetes is recognized as a triopathy involving lipid and protein metabolism as well as carbohydrate metabolism. This is why diabetics should periodically have an assessment of the serum levels of cholesterol and triglycerides and an estimation of circulating lipoproteins.

It should be noted that as Newton said of himself. "If I see afar it is because I stand on giant shoulders". Banting and Best made their discovery because earlier giants had gained the fundamental understanding on which the two Canadian researchers predicated their final breakthrough. Claude Bernard's work on sugar in the liver done in the mid-19th century and Minkowski and Von Mering's 1889 discovery that removal of the pancreas produced fatal diabetes in days were only two of the basic research findings leading to insulin.

Today the unsolved problems of cancer, heart disease, neurological illness and other ailments require similar basic discoveries before cures can be found. The insulin story is a useful reminder that great concentration on the "practical" approach to medical problems with a downgrading of research can be self defeating. The insulin story is of one disease conquered. The antibiotic story is remarkable because the cure of bacterial infections has revolutionized not only medicine but surgery and all its specialities and as noted above society itself.

When Sir Alexander Fleming, a bacteriologist, observed the lysis of a bacterial culture growing adjacent to a mold contaminant penicillium notatum in 1928, he published it. Ten years passed before Florey and Chain took up the observation, concluded that the secretion of the mold was toxic to the bacterial culture, extracted penicillin in minute quantities from the mold and proceeded to test it clinically. The second world war had just broken out and it was urgent to produce penicillin on a grand scale, a technological feat of enormous significance for the future of mankind.

The penicillin was in very short supply in this country and the late Chester Keefer in Boston was made the custodian of the supply and it was only furnished to very limited groups for treating infections whose organisms were known to respond to penicillin. In 1943 I had a patient with rheumatic heart disease who developed bacterial endocarditis, at this time a universally fatal disease. I called Dr. Keefer begging for a supply for this patient. He said it was in short supply and he can offer it only in cases of proved value and that bacterial endocarditis was not one of them. The patient died. She was born just too soon—a tragedy quite common in our lives.

Science moved much faster with penicillin than with insulin. From Minkowski and Von Mering's discovery of the role of the pancreas in diabetes 1889 to 1922 was 33 years. From Fleming's observation to Florey and Chain's application it was only 11 years.

However, no one practicing medicine today can escape the conviction that since the advent of antibiotics the treatment of infectious diseases has become more complicated at the same time that it has become more rewarding, for now we have changing patterns of infection and the need to treat some infections with combination of antibiotics. We have super infections, resistant bacteria. But we have conquered tuberculosis infection, and closed down sanitaria.

Searching for a cure of viral infections is more complicated. Rather it is methodical and dependent upon basic science and technology. We need to visualize the virus. We need to grow it. We need to be able to watch its invasion of the cell. How it appropriates the cell machinery for its own replication. Each of these steps are now under intensive study and chemicals to prevent any one of these steps will cure a virus infection. We can inhibit entry of some viruses by amantadine. We can prevent replication of some viruses by iodo-2′ deoxyuridine (IUDR). We can inhibit synthesis of the viral coat by thiosemicarbazone which prevents smallpox. Interferon prevents the virus from capturing the metabolic machinery of the cell so that viral protein cannot be synthesized. The future of antiviral therapy is at present very bright indeed.

As with the conquest of viruses, conquest of many disease is equally complicated and our knowledge grows one step at a time. There is no such thing as a crash program to cure anything.

It is worthwhile to consider not merely that the discovery of antibiotics was one of the causes for increase in longevity, but that antibiotics have permeated every part of the practice of medicine including all the surgical specialties from ophthalmalogy, neurosurgery, orthopedics, genitourinary surgery and obstetrics and gynecology. To recount the various ways in which life is preserved and healthy outcomes are promoted would be a never ending story.

(This is the first of a series of two articles).

FROM THE EXECUTIVE DIRECTOR'S OFFICE

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Summary of Actions Council Meeting

Thursday, May 11, 1972

I. Attendance

Present were: Drs. Grendon, Cramer, Root, Jr., Backhus, Nolan, Weber, Jr., Dean, Gardner, Fabro, Hess, Johnson, Harwood, Roch, Nemoitin, VanSyckle, Friedberg, Harkins, Milles, Krinsky and Hastings.

Also present were: Mrs. Lindquist, Mr. Sullivan, Mr. Tomat, Mr. Olson (FCMA) and Dr. Richards.

Absent were: Drs. Spitz, Brandon, Bradley, Rem, Ragland, Jr., Wilson, Dambeck, Canzonetti, LaBella, Freedman and Klare.

II. Organization

President Grendon called the organizational meeting to order, made brief opening remarks, asked those present to identify themselves by way of introduction, and declared that nominations for the offices of Chairman and Vice-Chairman of the Council for 1972-73 were in order. Without contest, Kenneth F. Brandon, Hartford, was elected Chairman, and David A. Grendon, Sharon, was elected Vice-Chairman. In the absence of Dr. Brandon, Dr. Grendon then called the business meeting into session.

III. Routine Business

Approval of Minutes

As printed and distributed (4/25/72), it was VOTED to approve the minutes of the meeting of April 5, 1972.

Life Memberships

It was VOTED to approve applications for Life Membership received from the following eligible Active Members:

Joseph J. Bruno, 1266 Forest Road, New Haven (NH)—1/1/73

Sherburne Campbell, 1192 East Main Street, Meriden (NH)—1/1/72

Arnulf R. van Dyk, 50 Granite Street, New London (NL)—1/1/72

Election of Student Member

It was VOTED to elect to Student Membership the following Connecticut resident who is enrolled in an American medical school:

David Lawrence Gottesman, 412 Lockwood Road, Fairfield
New York University—Class of 1975
Pre-Med: Yeshiva College
Parent: Milton Gottesman

Date of Next Meeting

The next meeting of the Council was scheduled to be held on Wednesday, June 28, 1972.

IV. Old, New and Special Business

Resignations, Appointments, Etc.

(a) *Committee on Public Relations:* It was VOTED to accept the resignation of George A. Sprecace, New London, as a member of the Committee.

(b) *Committee on Public Relations:* It was VOTED to accept the resignation of Howard J. Lockward, Manchester, as a member of the Committee.

(c) *Committee on Third Party Payments:* It was VOTED to appoint Theodore Zanker, New Haven, a psychiatrist, to membership on the Committee for 1972-73.

(d) *Committee on Hospitals:* It was VOTED to accept the resignation of Charles Polivy, Hartford, as chairman of this Committee and to defer appointing a replacement until the next meeting of the Council.

(e) *Conference Committee with Pharmaceutical Association:* It was VOTED to accept the resignation of Norman Alisberg, Bristol, as a member of this Committee.

(f) *Committee on Continuing Medical Education:* It was VOTED to appoint Norman Alisberg, Bristol, to membership on this Committee for 1972-73.

(g) *Committee on Professional Liability:* It was VOTED to appoint Timothy F. Nolan, Greenwich, to replace Morris A. Granoff, New Haven, as the representative of the Council on this Committee.

(h) *Committee on Statewide Medical Planning:* It was VOTED to accept the resignation of Sidney L. Cramer, Hartford, as chairman (by virtue of being President-Elect) of this Committee, and it was further VOTED to appoint Frederick C. Weber, Jr., Greenwich, to replace Dr. Cramer as chairman of the Committee for 1972-73. It was VOTED to add Stevens J. Martin, West Hartford, as a member of this Committee.

Communication—Section on Obstetrics-Gynecology

It was VOTED to receive as information and for filing the following communication from this Section (authorized by the members at a meeting held on 4/26/72): "The Section on Obstetrics and Gynecology protests that a fixed fee in our specialty (for abortion) was singled out for publicity at a recent meeting of the Hartford County Medical Association. There has been no prior precedent for such action in any specialty at the county or state level. Our Section deplores the action of the Hartford County Medical Association and recommends that prior consultation take place with the involved specialty (if such publicity is contemplated)." (Copies were sent to all component County Associations.

Being informed by members from HCMA that the news story referred to by the Section was not accurately representative of official reports made to the membership of HCMA at the Association's business meeting, the Council VOTED to request the Board of Directors of HCMA to respond to the Section's communication concerning the facts and circumstances of the subject matter being "deplored" by the Section, and furnish a copy of the response to the Council.

It was further VOTED to apprise the Section that the Council's policy with respect to setting or recognizing fees for the CSMS membership remains unchanged from that adopted on 4/17/69; i.e., " . . . It is the policy of the Society that no individual member or group of members shall negotiate any program of third party payment unilaterally, and that any sort of fee negotiations shall be conducted on behalf of all members of the Society, by the Society, with final approval resting with the House of Delegates."; also, to apprise the Section that HCMA is being requested to respond to the Section's subject communication.

Matters Referred by the House of Delegates 4/25/72

(a) *Bylaw Change:* The staff was directed to prepare an amendment to the Bylaws for action at the 1972 semi-annual meeting of the House of Delegates which will combine into a single committee the Committee on Accident Prevention and the Committee on Emergency Medical Services. Edward A. Rem, Norwalk, chairman of both committees and the initiator of the proposed change, is to be consulted regarding a suitable name for the single committee.

(b) *Annual Report, Judicial Committee:* In response to a question posed by the chairman of the Judicial Committee, 1970-72, the Council VOTED to approve the concept that "the Judicial Committee ought to initiate discussion and make recommendations concerning such problems of medical ethics as organ donation by minor children, gathering men from other disciplines as was done in arriving at a definition of death several years ago", and to so advise the chairman of the Committee for 1972-74.

(c) *Council-CRMP Representatives Communications:* It was VOTED to implement, *as far as feasible,* a suggestion of the House of Delegates that all CSMS members serving on CRMP boards and committees be informed of actions taken by the Council concerning CRMP, and, in turn, to urge all such CSMS members to keep the Council posted on all developments occuring within their respective CRMP boards and committees.

(d) *Liaison with State Welfare Department:* Having been urged by the House of Delegates to continue its efforts to establish liaison with the Commissioner of Welfare and the (Medicaid) Professional Policy Committee, the Council VOTED to direct the new chairman of the Liaison Committee with the Welfare Department, Leo P. Giardi, Hartford, to write to the Commissioner of Welfare to inform him of his appointment as Committee chairman, of the interest of his Committee in holding discussions with the Commissioner about Medicaid and related matters and in being of assistance concerning same, and to continue to seek a meeting with the Commissioner and/or the PPC as directed by the Council earlier this year.

(e) *Arrangements for CSMS Ambulatory Care Study:* Pursuant to the charge of the House of Delegates that the Council be the fiscal and administrative agent for the Society in all matters relating to the Ambulatory Care Study, approved by the House on 4/25/72, the Council took the folowing pertinent actions:

(1) It was VOTED to retain John A. Simpson, Bridgeport, as consultant to the CSMS Committee on Statewide Medical Planning in connection with the Ambulatory Care Study, such action to be retroactive to March 27, 1972, and for the period March 27-May 15, 1972. It was further VOTED to compensate Dr. Simpson for services on a fee-for-service basis (rather than as a CSMS employee).

(2) It was VOTED to approve, retroactive to March 18, 1972, the request made by then President Weber that CRMP make available to the Society the sum of $6,000 to be used to compensate Dr. Simpson for his services and other related services rendered pursuant to further "evaluation of the proposed study and refining of the program", and to accept the check in the amount of $6,000 that CRMP made available to the Society on 4/14/72 (by action of the CRMP Executive Committee, 4/3/72).

(3) It was VOTED to authorize the disbursement from the funds made available by CRMP of $1,500 to Frederick C. Weber, Jr., Greenwich, as repayment for the personal check in that amount that he forwarded to CRMP (about 4/1) to be given to Dr. Simpson as an advance on his salary.

(4) It was VOTED to direct the staff to deposit the $6,000 made available to the Society by CRMP in a separate, special checking account as the "CSMS Ambulatory Care Study Fund".

(5) It was VOTED to designate the Executive Director as the fiscal agent of the Council authorized to sign checks issued as disbursements from the special fund, and to refer to the Fiscal Committee for study and recommendation the charge for this disbursing service that should be made against the fund.

(6) It was VOTED to request Dr. Simpson to submit to the Executive Director a statement of charges for the personal services he rendered to the Ambulatory Care Study during the period March 27-May 15, 1972; also, an itemized statement of charges and expenditures (secretarial help, supplies, travel, etc.) incurred by him or at his direction as "study evaluator" during the same period.

(7) It was VOTED to designate the Committee on Statewide Medical Planning as the administrative agent for the Council in continuing plans for preparing and submitting a grant request for the Study to HEW, and to report on same to the Council at each meeting.

Report—Committee on Public Relations

Resolution on "Health Planning": It was VOTED to adopt, as amended by the Council, a subject resolution submitted by the Committee and to authorize "appropriate dissemination" thereof. The resolution, as amended, follows:

WHEREAS: It is recognized that increasing numbers of lay planning groups are undertaking projects of health planning; and

WHEREAS: It is recognized also that most of these groups of health planners choose to ignore the facility of the office of the practicing physician in their health care studies; and

WHEREAS: The vast majority of ambulatory care is being delivered in the facility of the practicing physician; and

WHEREAS: It is recognized as a fact that it is possible to deliver better medical care to a patient who has continuing personal contact with his physician; therefore be it

RESOLVED: That the Connecticut State Medical Society adopt the following guidelines to be used in any liaison contacts with health planners:

1. The medical profession is interested in seeing to it that the highest quality medical care is available to everyone in the United States.

2. The Connecticut State Medical Society is interested primarily in the quality of medical care and at the same time having this quality delivered at the lowest possible cost.

3. The Connecticut State Medical Society believes that the highest quality ambulatory medical care at the lowest cost can be given in the facility of the office of the practicing physician.

4. The Connecticut State Medical Society believes that ways of utilizing this facility should be explored first.

5. Transportation facilities to all existing health care facilities should be increased before new facilities are planned.

6. When, and only when, the facility of the office of the practicing physician is shown to

…in the presence of spasm or hypermotility, gas distension and discomfort, **KINESED**® provides more complete relief:

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Side effects: Blurred vision, dry mouth, dysuria, and other atropine-like side effects may occur at high doses, but are only rarely noted at recommended dosages.
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Spring peeper (tree frog, *Hyla crucifer*):
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be unable to handle the health needs of the area should supplementary facilities be made available.

7. At this point, the supplemental facilities in the area should be utilized to their maximum efficiency of quality.

8. After this saturation point is reached, then it is time to set up new facilities.

9. Health education to the consumer should be enhanced and promoted at all levels, one of which should be mandatory health education in the schools.

Endorsement—CHPC "Study of Radiation Therapy in Connecticut

On recommendation of David A. Grendon, Sharon, who chaired the subject Study's "Technical Advisory Committee," and William R. Richards, New Haven, who represented the Society on the Study's "Steering Committee", the Council VOTED to endorse in principle the "Study of Radiation Therapy in Connecticut" report and conclusions of the Connecticut Hospital Planning Commission. It was further VOTED to accept for filing the material published in the agenda in support of the foregoing recommendation, excerpted as follows:

> "The Executive Director and Dr. Grendon believe that this Study was made in a most responsible manner and that the conclusions and recommendations are reasonable. '. . .' The report of the Study is characteristically of the 'telephone directory' variety and is not suitable for distribution to the members of the Council for their individual reading. In brief, however, the results of the Study led to the following general conclusions and recommendations: That appropriate regionalization of radiation therapy facilities is a goal to be sought; that there should be certain standards in terms of equipment, personnel, case load, etc. that should be met if the operation of a facility is to be justified; that all existing facilities will be granted five years to comply with the standards; new facilities will have to meet the standards before being allowed to operate; and that cooperating hospitals, none of which meets standards, may join as a "facility" provided that, together, the standards are met."

CRMP

It was VOTED to receive as information and for filing a copy of the minutes of a meeting of the CRMP Executive Committee, held on February 28, 1972. Noting that mention is made in said minutes that consideration is being given to enlarging the CRMP Advisory Committee by the addition of representatives of Connecticut's Comprehensive Health Planning "B" agencies, the Council further VOTED to direct the CSMS-designates on the CRMP Advisory Board to reiterate the Council's desire to have increased CSMS representation on the Board even though the previous "percentage" goal (of at least one-third) has been withdrawn.

Matter Referred to Judicial Committee for Study and Opinion

It was VOTED to refer to the Judicial Committee, for study and opinion, the question raised by a member of the Council as to whether the Society may amend its Bylaws in such a manner as to impose conditions of membership in the component County Medical Association; i.e., if CSMS membership in good standing required periodic evidence of continuing medical education, would the County Associations have to mend their Bylaws to conform with the Society's subject requirement? At present, CSMS membership is derived solely from being accepted into County Association membership, with the setting of specific requirements of membership being determined by the respective county Associations.

N.B.: *The foregoing is a summary of the proceedings and action of the Council on May 11, 1972. Detailed minutes of the meeting are on file at 160 St. Ronan Street, New Haven, for perusual by an interested member of the Society.*

The Connecticut State Medical Society offers placement assistance through the Physicians Placement Service, 160 St. Ronan Street, New Haven, Connecticut, 06511. This service is for the use of physicians seeking locations, as well as physicians seeking associates, and is without charge.

Placement Opportunities

Allergist—Wanted as soon as possible. Must be board eligible for a two-man allergy practice which now requires a third man. Work week is four days; every third weekend off. Early partnership for right man guaranteed. 100,00 population. Centrally located in a university town. Connecticut license required. First year-five figure salary. Area Code 203 346-1575.

Allergist—Wanted as soon as possible. To join allergy practice in the southern part of the state. Large shore community.

Allergist—Opportunity in medium size community in Fairfield County. Convenient to New York

Allergist—To assume active private practice. Present allergist will remain to orient new physician. Conveniently located community. Drawing population of 200,000.

Anesthesiologist—Board eligible or Board certifield. Hospital of St. Raphael. Group Practice. Send resume to M. Garofalo, M.D., P.C. 1423 Chapel Street, New Haven, Connecticut.

Anesthesiologist—Two board eligible or certified anesthesiologists needed in urban hospital in the central part of the state.

Anesthesiologist—Large urban hospital has vacancy. Located in western part of the state.

Anesthesiologist—To join three man group in 180 bed community hospital. Interest in inhalation therapy and respiratory physiology important. Recent or near future residency graduate acceptable. Living conditions excellent in semi-rural area with nearby University of Conn. and State College affording many recreational and cultural advantages. Please contact Anesthesia Associates, P.O. Box 23, Willimantic, Connecticut 06226. Tel. 423-9201.

Anesthesiologist—To join Board certified chief of anesthesiology in small community hospital. No OB. Salary negotiable. If interested contact administrator or chief of anesthesiology. Johnson Memorial Hospital, Stafford Springs, Connecticut 06076.

Anesthesiologist—Associate position in medium sized community. Centrally located.

Emergency Room Physician—To complete four-man group. 100-bed, full service hospital. Solid backup in all specialties and most subspecialties from Active Staff. Central Connecticut community midway between Hartford and New Haven. Must be eligible for Connecticut licensure. Attractive salary, excellent benefits. Resumé to Chief of Staff, World War II Memorial Hospital, Meriden, Connecticut 06450.

Family Practice—Two physicians seeking a third in attractive shore community. Busy summer practice. Hospital conveniently located. Send resume to Karl R. Friedman, M.D., Old Lyme, Connecticut 06371.

Family Practice—Practitioner needed in rural community in the western part of state. Physician in community willing to assist in establishing newcomer in rural, solo practice.

Family Practice—Suburb of New Haven has opportunity for an associate in family practice.

Family Practice—Physicians in community northwest of New Haven searching for additional practitioner. Small, up-to-date community hospital.

Family Practitioner—To head Drug Dependence Unit in a private psychiatric hospital. 35-hour week. Salary appropriate to experience. Private practice permitted. Contact: Leo H. Berman, M.D., Hall-Brooke Hospital, Westport, Connecticut 06880 (203) 227-1251.

Family Practice—Practitioner wants to retire. Very attractive practice in southwestern Connecticut. Shore community. Near NYC.

Family Practice—Darien has ideal arrangement for newcomer. No OB. No surgery. Recently deceased physician had well established practice. Contact James V. MacGregor, M.D., 2 Queen Lane, Darien.

Family Practice—Two cities just north of Hartford in search for practitioners. Growing communities on Connecticut River. Physician Search Committees willing to assist newcomer with free office rent, etc.

Family Practice—Southwestern Litchfield County. Community hospital. Conveniently located. Community physicians also searching for pediatrician and Ob/Gyn to enter private practice.

Family Practice—Growing community seeks family physicians. North-central Connecticut. Approximately 47,000 population. Several hospitals in the area. New hospital in planning stages. Number of specialists in town. Conveniently located.

Family Practice—Full time or part time associate wanted for the shore community of Waterford, Connecticut. Busy summer practice. Community hospital readily available.

General Practice, Internal Medicine, Ob-Gyn and ENT: Needed in town of Torrington. 200 bed hospital. 50 physicians, over 50,000 population, Contact Joseph F. J. Curi, M.D., Chairman of Search Committee, Charlotte Hungerford Hospital, Torrington, Connecticut 06790. 203-482-0441.

General Practice and Internal Medicine—Both for solo and hospital based practice. Medium sized, north central community. Community hospital. Needed immediately.

General Medicine and Internal Medicine—Northwestern Connecticut community seeking to attract practitioners. Associate type practice possible.

Insurance company employee health service: Fulltime physician. Many employment exams and periodic physicals at Aetna suggest someone with strong diagnostic skills. Family practice or internal medicine preferred. Regular hours with weekends free. Retirement, medical and other company benefits. Salary up to $25,000. Send resume to E. S. Meinke, Personnel Department, Aetna Life and Casualty, Hartford, Connecticut 06115. An equal opportunity employer.

Internist—Community physicians seek additional internist to establish practice in medium size city northwest of New Haven.

Internist—Scenic northwestern community needs an internist. Physicians willing to assist candidate.

Internist—Certified or Board eligible. Wanted immediately to assume very active practice in Fairfield County, Connecticut. One hour from New York City. Gross over $200,000. Hospitals conveniently located. Privileges assured. Must be personable and have a good personality. Send resume and date available.

Internist—Rural community, but close enough for commute to Hartford. Small, community hospital. Physicians searching for additional coverage.

Internist—A third Internist is needed to join two other Internists in the town of Manchester, Connecticut. Office located across the street from a 300 bed community hospital which is currently in the second of a three stage building program. Manchester is located fifteen minutes from Hartford, one hour from New Haven, one hour and a half from Boston and two hours from New York City. For further information contact: Harold J. Lehmus, M.D., or David L. Warren, M.D., 56 Haynes Street, Manchester, Connecticut 06040. Telephone: 203-646-1167.

Internist—Preferably Board Certified or eligible, for chronic disease and cancer hospital having sections for TB in adults and children. 35 hr. week, 11 paid holidays, sick leave, 3 weeks vacation after one year of service. Salary level: $23,227-28,333. Paid health insurance and minimum charge for life insurance. Apartment available for physician with small family. Write Medical Director, Uncas-on-Thames Hospital, Norwich, Connecticut 06360.

Neurologist—Litchfield County area. Search Committee of the Medical Staff will assist qualified candidate.

Neurosurgeon—Opportunity in southwestern shore community. Near N.Y.C.

Obstetrician-Gynecologist—Group practice is looking for a second ob/gyn. 12 man multispecialty group. Northwestern Connecticut. Conveniently located to New York State. Send resume to Manager, Sharon Clinic, Sharon, Conn.

Ob/Gyn—Associate needed for community near New Haven. Coastal Town. Small Community Hospital.

Ob/Gyn—Community in western Connecticut in search of physician to open private practice. Community's growth requires additional medical services.

Ob/Gyn—Associate needed. Attractive community. Short distance from Waterbury.

Ob/Gyn—Associate needed for Waterbury group.

Ob/Gyn—Fourth ob/gyn needed in southeastern Connecticut town.

Ophthalmologist—Four vacancies. Each in the larger cities of Connecticut. Immediate opportunities.

Ophthalmologist—Associate needed to join two other ophthalmologists in large, centrally located Connecticut city.

Orthopedics—Four opportunities for association with established specialty groups.

Otolaryngologist—Two physicians approaching retirement. Eastern part of the state. Coastal area.

Otolaryngologist—Central Litchfield County in search for specialist.

Pathologist—Needed to join staff of hospital in large southwestern shore community.

Pathologist—Chief of Pathology wanted for 100 bed, full service community hospital. Excellent lab facilities, well staffed and equipped. Fee for service or salary. Central Connecticut. 20 minutes to either Hartford or New Haven. Resumé to Chief of Staff, WW II Memorial Hospital, Meriden, Connecticut 06450.

Pathologist—Director of Pathology to direct laboratories at the William W. Backus Hospital, 326 Washington Street, Norwich, Connecticut 06360.

Pathologist—Board Certified CP-PA with up to 10 years experience for university affiliated community hospital. Completing expansion to 400 beds. Immediate opening. Connecticut license eligibility; university appointment; salary negotiable. Contact Dr. I. Rothstein, Mt. Sinai Hospital, Hartford, Conn. 06112.

Pediatrician—Send resume to Administrator, Day Kimball Hospital, Putnam, Connecticut. Search committee wishes to attract physicians.

Pediatrician—Community physicians feel that another pediatrician is needed. Central section of the state. 40% of population 18 years of age and under.

Pediatrician—currently board-eligible or board certified. Full-time position. Salary negotiable. To practice family oriented medicine in a private, non-profit neighborhood health center. For further information please contact Evans H. Daniels, Jr., M.D., Medical Director, Community Health Services, Inc., 1023 Albany Avenue, Hartford, Connecticut, 06112. Telephone 549-1423.

Pediatrician—Needed to join physician in the Waterbury area.

Pediatrician—Community of Enfield needs pediatrician. Growing community north of Hartford.

Pediatrician—To join pediatrician in northeastern portion of the state.

Proctology—Lucrative practice available in New Haven. Physician deceased. Fully equipped office. Contact: A. M. Murray 203-787-4161.

Psychiatrists—Needed for state facility. Write Superintendent, Norwich Hospital, Norwich, Connecticut 06360.

Psychiatrists—Openings in mental hospitals and mental health clinics under the auspices of the State of Connecticut. Write Personnel Administrator, Department of Mental Health, 90 Washington Street, Hartford.

Psychiatrist—Board Certified or Eligible, to Direct Mental Health Clinic in General Hospital, half time, $15,000 to $25,000 depending on qualifications, opportunity for private practice, prefer with clinical experience and interest in development of comprehensive community services; attractive living in semirural community with University, near urban centers; send curriculum vitae with inquiry to Richard B. Ogrean, Administrator, Windham Community Hospital, Willimantic, Connecticut.

Psychiatrist—To head Drug Dependence Unit in a private psychiatric hospital. 35-hour week. Salary appropriate to experience. Private practice permitted. Contact: Leo H. Berman, M.D., Hall-Brooke Hospital, Westport, Connecticut 06880 (203) 227-1251.

Radiologist—Needed immediately at Veterans Hospital. Contact Medical Director, Rocky Hill Veterans Hospital, Rocky Hill, Connecticut.

Radiologist—Large hospital needs radiologist.

Senior Physician—positions available at Norwich Hospital. Primary responsibility for medical care of geriatric and mentally ill patients in a community oriented, geographically unitized hospital with many forward looking, exciting programs. Starting salary $20,465, many fringe benefits, housing available. Write Superintendent, Norwich Hospital, Norwich, Connecticut 06360.

Surgery—General—Board certified surgeon seeking Board certified partner or associate in general surgery to practice in northern Connecticut. Small community hospital. Attractive community. Conveniently located. Write Physician Placement Service.

ANYONE INTERESTED IN THE ABOVE IS ASKED TO CONTACT THE PHYSICIANS' PLACEMENT SERVICE, 160 ST. RONAN STREET, NEW HAVEN, CONNECTICUT

Placement Wanted

Allied Personnel

Assistant or Associate Hospital Administrator—Medium sized hospital. Available Sept. 1972. Masters of Business Administration from Univ. of Florida, University Hospital of Jacksonville. 27 years of age. Married. Wishes to locate in Connecticut or Massachusetts. David B. Driggs, 1220 LeBaron Avenue, Jacksonville, Florida 32207.

Physician's Assistant—25 years of age. Presently enrolled P.A. Program at Duke University. Desires smaller coastal community. Assisting solo practitioner or group practice. David E. Lee, 2104 Chapel Hill Road, Durham, North Carolina 27707.

Physician's Associate—Special training in general surgery, urology, orthopedics and plastic surgery. Experience as a OR scrub technician. B.S. Degree. Will complete P.A. Program at Duke University in August. Patricia E. McNabb, 802 Louise Circle, Apt. 29-L, Durham, North Carolina 27705.

MEDIHC Program—Former military medics; number of candidates available. Contact: Henry J. Miller, Military Experience Directed into Health Careers, 640 Chapel Street, New Haven, Connecticut 06510. Phone: 865-0862.

General Medicine—Available November 1972. Prefers Emergency Room. Or family practice in rural locale. Robert W. Lisle, M.D., 4235-C FCN, McGuire AFB, New Jersey 08641. (609) 724-2100, ext. 2945.

General Medicine—Available 8/15/72 to 2/15/73. Currently with U.S.P.H.S. George J. Saari, M.D., Box 175, Neah Bay, Washington 98357.

Cardiology—Partnership, Associate, or group practice. Medium sized community. Teaching hospital affiliation if possible. (FLEX) Fellow in Cardiology at UCLA Medical Center. Shuja Ghaznavi, M.D., Apt. #3B, 540 South Euclid Ave., Pasadena, California 91106.

Cardiology—Board certified. Available now. Large community with associate or group type practice. 32 years old.

Cardiology: Available in October. Board certified. Desires teaching, administrative and/or clinical position in community away from metropolitan area. Group or institutional practice. 32 years of age.

Dermatology—Board eligible. Prefers solo or group or associate practice in large or medium sized community. Available immediately. Bernard J. Cahn, M.D., Box 2955, Duke Hospital, Durham, North Carolina 27710.

Gastroenterology—Board eligible. Available November. Desires large community in group or associate practice. 32 years of age.

Industrial or Institutional—Available with two months notice. Connecticut license. OB/Gyn. 28 years of experience. Wishes stimulating position, regular hours. Travel no deterrent.

Internal Medicine: Hematology—Available 9/72. 32 years of age. Board eligible. Medium sized community. Group or associate or institutional type practice. Dennis A. Casciato, M.D., 15147 Burbank Blvd., Van Nuys, California 9401

Internal Medicine: Hematology-Oncology—Board eligible. Available 1/73. 33 years old. Large or medium sized community. Group or associate practice. John S. Hunt, M.D., 11611 Chenault Street, Los Angeles, California 90049.

Internal Medicine—48 years old. Desires salaried position in large or medium sized community. Board eligible. Available in short notice.

Internal Medicine: Rheumatology—30 years old. Board eligible. Group or institutional practice in large or medium sized community. Available in August. Stuart N. Novack, M.D., 17-51 215th Street, Bayside, New York 11360. (423-1110).

Internal Medicine: Cardiology—32 years old. Board certified. Available September. Group or institutional practice in large or medium sized community. Former teaching fellow at Harvard. John C. Santos, M.D., U.S. Army Hospital, Frankfurt, Germany. APO New York 09757.

Internal Medicine—Available in August. Board qualified. Rheumatology and infectiuos diseases. Conn. license. 31 years old. Group or associate or institutional practice desired.

Neurology—Available 9/72. Board eligible. 30 years of age. Passed National Boards.

Neurology (clinical)—British trained. Presently in practice. 41 years old. Available at a mutually convenient date. Solo, group or associate practice. Medium or small community. George J. Vakkur, M.D., 2375 Terwood Drive, Huntingdon Valley, Pennsylvania 19006.

OB/Gyn—Board eligible. Desires associate, group or solo practice. Conn. license. 42 years old. John E. Mullin, M.D., 200 North Long Beach Avenue, Freeport, New York 11520.

Ophthalmology—Board eligible. Available November 1972. Conn. license. Passed National Boards. Prefers coastal area, but a large or medium sized community in Connecticut will be considered. Solo, group or associate practice. Jean Pierre Huberman, M.D., Apt. #207, 5402 N. Nevada, Colorado Springs, Colorado 80907.

Orthopaedics—Board eligible. Available October 1972. 32 years old. Presently at Univ. of Cincinnati. Associate practice desired. Permanent visa with declaration of citizenship. S. Nayebi, M.D., 611 Lowell Ave., #23, Cincinnati, Ohio 45220.

Pathologist—Board certified. Conn. license. 33 years old. Group or associate practice desired.

Pathologist—Board certified. Available September 1972. Desires group or associate or institutional practice in large or medium sized community. Joseph W. Placer, M.D., 130th Station Hospital, APO New York 09102.

Pathologist—Board certified. Available September 1972. Desires medium sized community with group or institutional practice. 33 years of age. Interested in shore location.

Pathologist—Board eligible. 40 years old. Group or associate or institutional practice. Howard S. Zucker, M.D., 302 Avenue N. Brooklyn, New York 11230.

Pediatrics—Available 1/73. Board eligible. Currently Fellow in Ambulatory Pediatrics at University of Rochester, Conn. license.

Pediatrics—Board eligible. 36 years old. Available August 1972. Group or associate or institutional. V. Kavirajan, M.D., 97-30, 57th Ave., Apt. 2M, Lefrak City, New York 11368.

Pediatrics—Board eligible. Available October 1972. Group or associate or institutional practice in large city. 29 years old. Southern Connecticut area desired.

Psychiatry—Board eligible. Available September 1972. Group practice in medium or small community. 32 years old. Interested in combining mental health appointment and private practice. Frederick Fried, M.D., 2601 E. 25 Street, Topeka, Kansas 66605.

Surgery—General and vascular. Available January 1973. Board qualified. Harvey G. Clermont, Lcdr. M.C., USN, Box 11, Nav. Sta. Adak, FPO Seattle, Washington 98791.

Surgery—General: Board certified. 35 years old. Available August 1972. Group or associate or solo practice. Alexander N. Gunn, II, M.D., 63 Roundwood Road, Newton, Massachusetts 02164.

Surgery—General, Board eligible. Available October 1972. 33 years old. Morris A. Kugler, M.D., 507 Cherokee, Highland Park, Illinois 60035.

Surgery—General, Board certified. 34 years old. Available September 1972. Group or associate or institutional. Brian S. Miscall, M.D., 4314 Bethel La. Road, Columbia, South Carolina 29206.

Surgery—General, thoracic and vascular. Board certified. Available August 1972. 33 years old. Group or associate. John M. Parsons, M.D., 215A 84th Street, Virginia Beach, Virginia 23451.

Surgery—General. 33 years old. Board eligible. Available December 1972. Associate type practice. U. S. Soriano, M.D., 11042-128 Street Ste. 307, Edmonton, Alberta, Canada.

Surgery—Board eligible in thoracic surgery. 31 years old. Group or associate or institutional. Marshall W. Webster, Jr., M.D., 510 Rutgers Avenue, Swarthmore, Penn. 19081.

Urology—Board eligible. Available September 1972. Group or solo or associate practice in large or medium sized community. 33 years old. David O. Taber, Major, M.C., Chief, Urology Clinic, 130th General Hospital, APO 09696.

ANYONE INTERESTED IN THE ABOVE IS ASKED TO CONTACT THE PHYSICIANS' PLACEMENT SERVICE, 160 ST. RONAN STREET, NEW HAVEN, CONNECTICUT 06511.

Inhibition Of Carbohydrate Induced Hypertriglyceridemia By Phenformin

A recent study by Owen in *Diabetes* 20:739, 1971, reports on the action of phenformin on increases in plasma triglycerides on ten subjects. Administration of carbohydrate load caused a rise in plasma triglyceride levels to double the control. The rise was almost completely abolished when phenformin was given.

The mechanism of this action is not understood since the drug caused no change in glucose tolerance or in insulin secretions.—L.H.N.

FOR PATIENTS OF ALL AGES, REGARDLESS OF RACE, COLOR OR CREED, WHO NO LONGER REQUIRE GENERAL HOSPITAL CARE AND WANT TO BE HELPED TO "GET UP AND GET WELL FASTER."

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Special Article

A Challenge to the Academic Leopards: or HO, HO, HMO!

George A. Silver, M.D.

It occurred to me while I was reading an instructive acticle by Clark Havighurst on health maintenance organizations that the administration has a bear by the tail in its dealings with academe (medical branch). The particular paragraph that stimulated this essay reads as follows:

> ". . . because of this unresponsiveness to the public concerns and the opportunities for abuse of power, non-profit monopolies are no more to be trusted than the other kind".*

He is speaking of medical societies *and* medical schools, coupling these presumed enemies in his cynical view of their altruism.

Every institution has a hallmark and an image. Sometimes they coincide, but not always. Some are paper tigers. Some are iron hands in velvet gloves and so on. For many high level government officials, the organized professional group representing medical education is viewed rather indulgently as "eggheads"—hard-boiled in their professional context, soft politically. They can be "handled". One displays a respectful affability to their demands and presentations without trying too hard to understand the content, because in the long run it doesn't make too much difference anyway. Policy decisions on expenditures, program direction, and the like will be made by confident bureaucrats (some with medical educations), shrewd politicians in and out of the Congress and the Executive branch (none of them doctors!). And the medico-educators will get along, go along, wallow helplessly or thrive. None will go under, because at the brink a few dollars or a newly tricked out bit of legislation will save Pauline.

At least that's the way it has been. And the people's health has not suffered sufficiently or at least hasn't seemed to suffer noticeably as a result of these casual political fillips.

The customary blame for the situation is directed at the AMA (earned) and the conservatives (earned) but never at the medical educators or the politicians. The latter get off scot free because the clamor emanates from other complaints and the medical educators are too often seen as victims rather than villains.

But the deficiencies of the system in failing to deliver adequate medical care to a large segment of the population, and unsatisfactory care to many more, as well as the mounting inflation of cost and difficulty of access which enrages even those capable of paying for service if it could be obtained, has fathered a storm of legislation for change. Most of the legislation is aimed at changing the way doctors are paid, or the way they practice, very little at how they are selected or trained.

Most of the more radical legislative and administrative efforts will probably be cooked into a new stew after long Congressional simmering. But one ingredient is already visible: the HMO.

Ideally, as the Administration sees it, doctors all over the country, hospitals, medical schools sheltering a large number of doctors under their wing, will recognize the writing on the wall, take caution at the threat of penalties if they don't seize the opportunity and flock into these prepaid ameboid structures called HMO's.

It is likely that the practicing doctors will examine the issue, turning it this way and that and come up with a decision that will favorably affect their income. In some parts of the country, where group practices already dominate the scene (midwest and far west, for example) this will be easy. They will opt for the HMO. In other parts of the country, Medicaid payments being what they are, and solo practice still quite lucrative, the temptation to organize into groups or associated clusters of whatever kind will be resisted.

In any case, I am concerned now about the academic scene. To the Administration and all those who see the practice of medicine as following academic rule, it is important to lead the teaching

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DR. GEORGE A. SILVER, Professor of Public Health, Yale University School of Medicine, New Haven, Conn., Department of Epidemiology and Public Health.

*"Health Maintenance Organizations"—Health Care: Part II, Duke University, LAW AND CONTEMPORARY PROBLEMS, Autumn 1970, p. 793, footnote.

hospitals and medical schools into the fold, as important sign posts in the direction of change. Also, this represents a step and a very important one, in persuading the patients (the voters), that significant progress is taking place.

So academe is geing wooed. A large grant has been given the AAMC to prepare conferences and discussions among the teaching institutions. Articles on HMO's are appearing in learned journals, once devoted wholly to descriptions of water transport across the membrane of the polygonal cells in the toad's bladder. Every professional meeting, particularly the national ones, will have a session on HMO's.

The attack on academe is being led by the deans. This is not so extaordinary, after all, since money for services plus overhead will not be routed to individual departments, like research money. This money will come through, or be controlled by, the deans' offices. The deans, accustomed to roaring ineffectually, while the quiet lions in charge of the clinical departments rule, may turn more leonine themselves under the influence of the added funds and rule as well as roar.

Well, if the issue were solely one of the transfer of power from the nobles to a prince, one might encourage the HMO's.

The danger to academe lies in the deceitful promise the HMO now offers, which threaten not only the power of the chiefs of fiefs, but the integrity of the schools themselves. As in most difficult situations, the danger lies more in ourselves than in an outside enemy.

The medical schools have been brought into awareness of social demands in the past decade. Medical schools are expected to involve themselves in the delivery of health services. (Sensitivity to criticism of the "ivory tower".) This is coupled with recognition of the need to teach family-centered comprehensive health care, to which is coupled the need to find new sources of "teaching material", as public payment programs encroach on the classical source—the indigent population.*

I see several traps and I will deal with them, seriatim, but it should be understood that they are interrelated.

The first trap is "good medical care"—quality, its demonstration and its provision for learning opportunities for students.

The second is emphasis: how much of what is being done or used is a significant part of the institution's activities?

Third, if it is a logical process, is it researchable?

Look at quality first.

Good teaching includes prevention along with service; education of professionals is associated with health education and community outreach. The painstaking diagnostic and therapeutic assessments and provision of care commonly accepted as functions in medical education are increasingly associated with these other factors. Furthermore, good medical care, said to be the basis of good medical teaching, includes a battery of resources of in and out-patient services: ambulatory care, emergency care, acute and chronic general care, specialized facilities, long term and home care. Good service and good teaching include demonstration of comprehensive programs with student participation, for the study of the organization of services and appropriate supervision of the medical care given.

Unquestionably this will require a heavy outlay of money. Staffing the programs, even without the teaching add-ons, will be very expensive. No program should be undertaken unless the funding for such teaching and demonstration will be clearly available.

Integral to this concern is the necessity for programs so organized as to be seen as an intimate part of the way in which the institution itself operates. An HMO which is 5% or 10% of the institutional activity can't have a very significant effect on the students. If it is running parallel to a much more influential traditional activity it is the traditional activity that will be meaningful to students. In addition, the duplication and competing services will have a deleterious effect on the institution itself. Either that or the HMO will be out of business. The "model" will probably not "take", anyway, since the students will see it as artificial.

Then, any service component of a teaching institution to be successful in the medical education model, has to have a research component. This is not only necessitated by convention, but because of the elementary evaluation needs of any useful service program. The institution has to show that it is committed to investigation of the product and the process in order to be able to teach the advantages (or disadvantages) of the model; that it is not to be taken on faith, or simply as an obeisance to economic necessity.

This too costs money.

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*These points are made in "The Twentieth Century Hospital", by Anne Somers, published in MEDICINE & SOCIETY, American Philosophical Society Library, Pub. #4, Philadelphia, 1971, pp. 236-257.

And this raises additional, interesting questions about the process, and the changes envisioned.

For example, just as the AMA (the "town" constituency), resents any implication that doctors need supervision or control, resting their case on the solid virtue implicit in a medical career; the "gown" constituency (academe) resents any implication that their quality may suffer in transfer from one form of practice to another. The jealous, haughty full-time practitioner cannot bear to have his integrity impugned! Will the academic HMO accept supervision?

Another, rather more economic obstacle, stems from the probability that any new process may require new types of personnel, or a different distribution of old types in its implementation. Will the medical institution undertake to shape the new roles, require their graduates to undertake them, train new people for the new roles required, reorder their training programs to undertake the training of the new personnel required?

A whole series of subsidiary questions are subsumed in these, and I will not explore them in depth, but only ask if the institutions are prepared to move in this direction if the process demands it?

Clearly, doctors are going to have to see their role in new ways, which means new training processes in the medical school. We have talked about more emphasis on ambulatory rather than in-patient medicine (Is in-patient, complicated medical problematic teaching really the best way?) and team teaching, team education, team practice. Will the medical school be doing this in the HMO? At whatever cost to traditional departmental structure or operational hierarchies? Can the academic leopards really change their spots?

All of these questions assume that the money will be there, to entice the administrators, the boards of trustees and the lesser departments, to accept the radical changes implicit.

But will it?

A look at the legislative proposals of the administration, and the definitions promulgated by various Federal agencies, along with proposals of other legislators, gives little encouragement. All propose an organized system of health care, which accepts the responsibility for, or otherwise assures the delivery of, an agreed upon set of services for a voluntarily enrolled group of persons in a geographic area reimbursed through a fixed periodic payment.

Can a medical school live with a fixed compensation if it is to carry out all the responsibilities noted above? And will the cost be competitive with other HMO's in the neighborhood? Will the necessary larger commitment, coupled with the teaching costs, price the medical school or teaching hospital out of the market?

Isn't the competition envisioned bound to militate against the best interests of the consumer when the medical school cuts its cloth to meet the competitive costs; or against the student if the cloth is cut to meet competitive costs? Won't cheaper rather than more professionally desirable options be sought?

Return for a moment to Havighurst:

"The funds and organizational efforts called for, the difficulty of educating and attracting sufficient enrollees from a public accustomed to fee-for-service medicine and the problems of attracting physicians into such plans are all likely to be underestimated . . . these barriers are so substantial that they can be overcome in a reasonable time only by allowing plans to generate profits . . ."*

But there are other difficulties. Voluntary enrollment? What about selecting "teaching material"? What about adverse selection of risk? Won't the sickest, most demanding people gravitate into the teaching hospital center?

Underwriting problems have plagued prepayment plans from their inception. If an insurance company makes a mistake in its underwriting, it can raise the premium next year. What will the medical school do in the light of fixed compensation? Particularly since no one, in any country, has been able to fix a figure that covers the cost of education as a component of service, not the AAMC itself in its study over the past several years, not Brian Abel-Smith in a WHO survey.**

In legislative proposals other than the Administration's (Congressman Roy et al, HR 11728) an added constraint is the necessity for providing consumer participation in policy, services and grievance amelioration and negotiation. What complications can be envisioned under these circumstances for the academic medical center, given even the greatest and most favorable inclination for community participation?

For these reasons, the suggestion has been made that the academic medical center sponsor, or collaborate with, an HMO outside the walls, either in an associated teaching institution in the city, or in affiliated hospitals nearby. This too will create difficulties, in devising structures for teaching that will give the teaching program sufficient cachet to attract the students, yet retain control within the academic institution and offer supervision. But the urgent financial need of the teaching institutions and the fear of supersession by the departmental barons may render such solutions ineffective.

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*Havighurst, op. cit., p. 722

**In WORLD FAITH, November 1971, Geneva, and in John Cooper and Brian Abel-Smith personal communications.

Many experienced group practice specialists—clinicians and administrators—advance the view of affiliation for HMO action rather than autochthonous development. Ernest Saward writes, "The medical school should not assume direct authority for the operation of the clinical aspect of the University's model health program, but this should be delegated by contract to an association of physicians".*

A seduction scene is being played out. Can the medical school meet, and does it want to meet, these criteria of good teaching, community participation, supervision and cost control? Can it afford to take the financial risk? Can it take the educational risk of failing to demonstrate the best of modern care to its students, in a modern fashion? What lesson will the students learn if they see the school skimping on patient care, or cutting corners to be competitive with an aggressively commercial HMO?

Let me conclude with a cautionary note: "To the extent that we permit ourselves to be seduced by simplistic answers to complex problems . . . we also diminish our ability to come to grips with the hard problems of both delivery and professional education.**

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*KAISER-PERMANENTE MEDICAL CARE PROGRAM, A SYMPOSIUM, ed. Anne Somers, Commonwealth Fund, New York, 1971 (p. 187)

**Anne Somers, op. cit., p. 257

Accredited Workshops On Hypnosis In Medicine

The Society for Clinical and Experimental Hypnosis in collaboration with the Beth Israel Hospital Psychiatric Service, Department of Psychiatry, Harvard Medical School offers *Accredited Workshops* on The Use of Hypnosis in Medicine, Tuesday, October 10th—Friday, October 13, 1972—Sheraton Plaza Hotel, Boston.

The aim of the Workshops is to provide the participant with an opportunity to learn hypnotic techniques and to apply them in the context of his medical practice. They are designed to develop his skills in the therapeutic application of hypnosis, and will be conducted by a faculty with considerable experience in teaching hypnotic techniques at a professional level. Every effort will be made to maximize the learning experience by limiting the size of the groups and by careful selection of the participants on the basis of shared interests and relevant experience.

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Advanced: The Advanced Workshop is oriented towards physicians who have already participated in an introductory workshop or its equivalent. This workshop will deal with more sophisticated and advanced techniques of hypnosis and the use of hypnosis in the treatment situation, including the psychodynamic aspects of the treatment situation.

Workshops on Hypnosis in Psychotherapy and Research will also be offered to individuals with appropriate interests and background.

For further information, kindly write to: SCEH Workshops 1972, Psychiatric Service, Beth Israel Hospital, 330 Brookline Avenue, Boston, Massachusetts 02215.

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Electrocardiogram of the Month:

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Prepared by
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Associate Professor of Clinical Medicine,
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Memorial Unit, Yale-New Haven Hospital

The Ventricular Premature Beat, An Aid In Exposing Cardiac Pathology

The ventricular premature beat both by virtue of its being followed by a compensatory pause and its own peculiar configuration can be an important aid in unmasking underlying cardiac pathology. In this, the first of a series of three articles, is presented the value of studying the compensatory pause as a help in the recognition of abnormal atrial rhythms.

The exact nature of a supraventricular rhythm at times may be difficult to ascertain from an analysis of body surface leads because some or all of the atrial deflections may be partially or entirely buried in the QRS complex or in the T wave. Most VPCs are not conducted retrograde to the atria and therefore do not disturb the timeable of the atrial pacemaker. During the compensatory pause which follows the VPC it is often possible to identify the form of the atrial complex and to determine the exact atrial rate.

Fig. A taken from a 60 year old male with congestive heart failure shows a ventricular rate of approximately 100 beats per minute with QRS complexes characteristic of RBBB. Cursory inspection of lead V1 reveals atrial complexes preceding each QRS complex, and one might be mislead into concluding that a sinus tachycardia of 100 beats per minute is present. Closer scrutiny of this lead shows some variability in the AV conduction times and this should make one suspect the presence of some other rhythm disturbance. VPCs are noted in leads aVL and V5. During the compensatory pause following these VPCs one can clearly identify atrial deflections (arrow head point to them) occurring at 5 mm. intervals indicating the presence of atrial flutter at a rate of 300 beats per minute with 3:1 AV block.

Fig. B similarly reveals the value of studying the compensatory pause in identifying the exact nature of a rhythm disturbance. The record is from a patient, age 70, who had been receiving digitalis and diuretics as treatment for congestive heart failure. The QRS complexes occurring at a rate of 102 beats per minute are each preceded by an atrial deflection with a seeming PR interval of 0.14 sec., suggesting that the rhythm present is a sinus tachycardia. Closer inspection, however, reveals a somewhat angulated appearance of the terminal portion of the ST segments raising one's suspicion that another atrial complex is here superimposed and that the rhythm is actually an atrial tachycardia of 204 beats per minute with 2:1 AV block, a rhythm disorder frequently caused by digitalis intoxication. Inspection of the compensatory pause following the VPC does in fact confirm the suspicion that atrial complexes (arrow heads point to them) are present at a rate of 204 per minute (P′–P′ intervals of 7.25 mm.). This atrial tachycardia with 2:1 AV block subsided promptly following withdrawal of digitalis.

The above tracings exhibit the value of studying the compensatory pause folowing a VPC in establishing the exact nature of a supraventricular rhythm. Such study may make it unnecessary to resort to use of esophageal or transvenous leads or to carotid sinus stimulation in an attempt to demonstrate the rate of atrial deflections.

(To be continued)

Fig. A

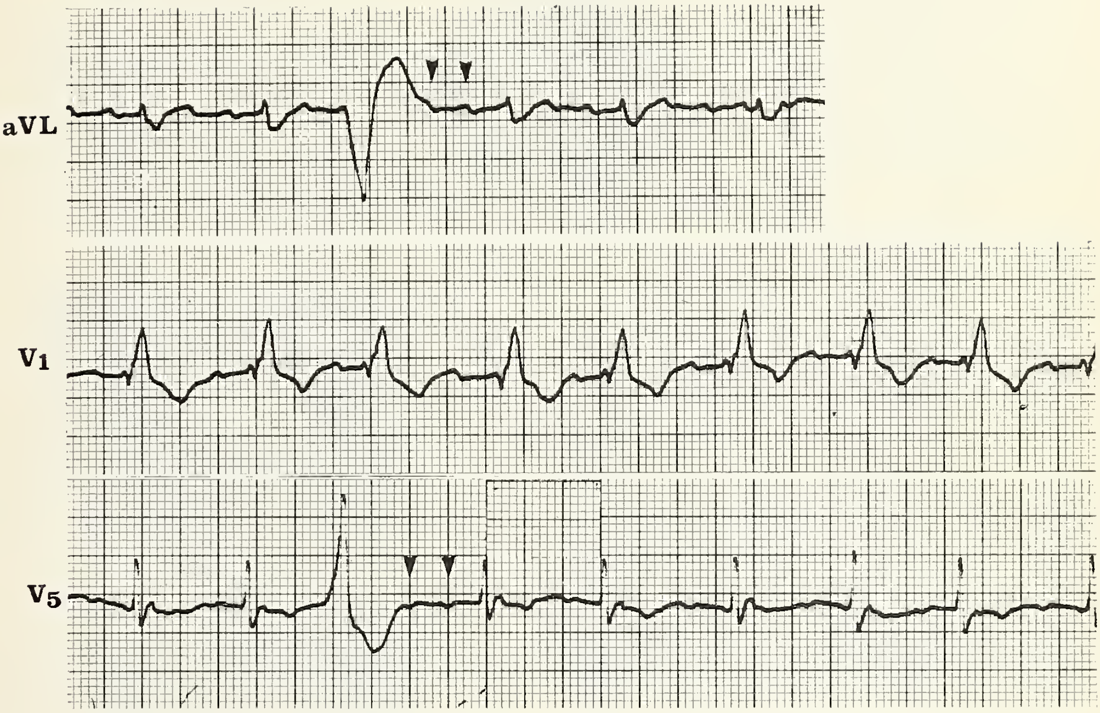
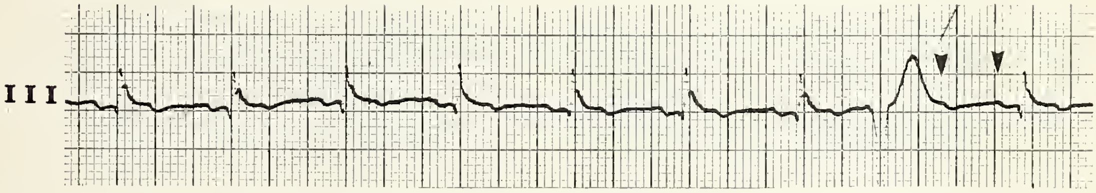


Fig. B



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Auxiliary Marks 28th Anniversary

Mrs. Howard (Betty) Liljestrand of Honolulu spoke at the Auxiliary's twenty-eighth annual meeting. A gracious and noble woman, she inspired members to sustain its high ideals. In brief, she said:

You listen to many speeches, as I do. We hear about crises—drugs, crime, sexual permissiveness, decay of cities, campus riots, pollution, population, even faith. People are bewildered. Many of them lapse into hand-wringing. Others are contributing, and I know that's true of you.

Drug addiction is a symptom of a primary problem which is lack of a life objective, lack of a goal, a challenge. Polls among college students have revealed that many thought they would be dead in five years, not by atomic war, but due to ecosystem unbalance. You probably recall a childhood that was pleasant and stable. Most of us assumed a future and set goals oriented to a secure environment. Things are different now. Nobody knows what tomorrow will be like. Some of our children set no goal except that of being happy. They don't realize that a worthy objective is a basic ingredient of happiness.

Your presence here indicates that you have goals. I express mine in this way: Having the good fortune to be born in this rich country, where there is abundant opportunity, I feel impelled to reciprocate with concern and effort, to ease the suffering of the less fortunate, to make knowledge available for all, and to preserve the world in a state that can be enjoyed by all, for all time. And for me, there is no better vehicle for this philosophy than the Auxiliary. It provides the fellowship, the projects, and the action that comes from joint effort.

Problems are proliferating like the growing jungle that surrounds my mountain home and keeps encroaching. How should we react to them? We first educate ourselves. To influence others we must have reasons for our opinions. And then we must act. Auxiliary committees provide opportunities to unify our actions—Legislation, Political Action, Health Careers, International Health Activities, Health Education, Volunteer Health Services.

A medical association officer recently said to me, "The Medical Association cannot buy, at any price, the good publicity and public relations which our Auxiliary is producing for us." This is not our primary purpose, but the incidental earning of favorable public opinion will maintain medicine's position of leadership.

You are taking a stand for what you believe. If you multiply the Connecticut Auxiliary's accomplishments by fifty, results are magnificent. But consider how much more dynamic we could be, if the non-member doctors' wives of the country were with us. Their membership depends upon us more than upon them. We have to make them want to join us by providing interesting jobs and inviting them to help.

Are you especially interested in any particular problem? Marya Mannes said, "It is long past the time when each can tend her own garden and consider her task done. The jungle around this garden is her task as well." Have you hacked at the encroaching jungle today? Prune a little, weed a little, pick up your machete and hack. Dedicated doctors' wives, during the last fifty years, have left us a clearing worth defending. Let's preserve it and enlarge it, and shoulder to shoulder work to bring light to the jungle—the light of goodwill, truth, and unselfish service.

OBITUARIES

J. Grant Irving, M.D., F.R.C.S.
1907-1972

In the death of J. Grant Irving, M.D., the medical profession as well as the citizens of Connecticut and of our nation have lost an untiring and devoted servant. He was stricken with a severe attack of coronary thrombosis while attending a medical meeting in Wallingford on February 23 and died on March 11, 1972 in Hartford Hospital.

Dr. Irving was born November 15, 1907 at Manitowaning, Ontario, Canada, the son of Adam and May Grant Irving. He graduated from Oakwood Collegiate Institute in Toronto in 1925, received his B.A. degree four years later from University College, Toronto, and his M.D. degree in 1932 from the University of Toronto Medical School. While in college he was active in sports, playing on soccer, ice hockey, water polo and baseball teams. He became a member of Alpha Kappa Kappa medical fraternity. Following graduation from medical school he served a residency at Toronto General Hospital and then went to Scotland to continue postgraduate studies in surgery at the Edinburgh Royal Infirmary. It was while there in 1934 that he was elected a Fellow of the Royal College of Surgeons. He next served a term as house surgeon in the Coventry & Warwickshire Hospital, England, following which he returned to the States for a residency in New York Post-Graduate Hospital, then part of Columbia University.

Dr. Irving came to Hartford in 1935 as Assistant Medical Director of Aetna Life and Casualty. After seven years he rose to Associate Medical Director, in 1947 to Medical Director, and in 1960 was given the newly created title of Chief Medical Director. His activities in the medical insurance field were innumerable. A Diplomate of the Board of Life Insurance Medicine, he served at various times as Chairman of the Medical Section of the American Life Convention, a representative on the National Fund for Medical Education, Treasurer of the Association of Life Insurance Medical Directors of America and Chairman of its Committee on Uniform Life Insurance Examination Forms, and member of several related committees. He was also Chairman and Treasurer of the Medical Information Bureau Executive Committee as well as Chairman of the Medical Relations Committee of the Health Insurance Council. He was a frequent public speaker and author of articles appearing in books and professional publications, and was on the editorial board of the publications *Executive Health* and *Annals of Life Insurance Medicine.*

Dr. Irving's service in World War II as a U.S. citizen included tours of duty as a neurosurgeon in American Army hospitals in New York, Michigan and Florida, and overseas in Britain, France and Germany. He retired from active duty after the war with the rank of major.

With all his activities in the medical insurance field he found time to serve the medical profession as Chairman of the Trustees of both the Hartford Medical Society and Hartford County Medical Foundation, President of the Hospital Council of Greater Hartford, President of the Greater Hartford Council on Alcoholism, charter member of the Hartford Heart Association, and a Director of the Connecticut Diabetes Association and of Atomedics, Inc. At the time of his death Dr. Irving was President of the Hartford Medical Society. He was a member of the Consulting Staff in Medicine of Hartford Hospital and of the Medical Advisory Committee of the Veterans Administration Hospital in Newington.

Grant Irving was a faithful communicant of the Asylum Hill Congregational Church, for many years one of its deacons, and a member of its committees on music and on planning and development. His interest in the welfare of his fellow citizens included memberships in many organizations such as the Capitol Region Mental Health Planning Council of the Greater Hartford Community Council, the Hartford Industrial Rehabilitation Committee, Salvation Army Advisory Board, Asylum Hill Area Planning Commission, Connecticut Hospital Planning Commission and Hill-Burton Advisory Council for State Hospital Planning, and the Connecticut Comprehensive Health Planning Council. He was actively interested in the Wadsworth Atheneum and initiated a medical historical exhibition. He was also a member of the Twentieth Century Club.

In addition to membership in the local, county, state and national medical societies, Dr. Irving belonged to the American Association of Military Surgeons, New York Neurosurgical Society, and the national and Connecticut Industrial Medical Associations. Grant was an ardent hockey and baseball fan as well as a golfer, evidenced by his membership in the Yale Hockey and Baseball Associations and the Hartford Golf Club.

He is survived by his wife, the former M. Jeannette Purvis, two sons, J. Bruce Irving of Riverdale, N.Y., and Robert Grant Irving of West Hartford, and two grandchildren.

In the words of the Rev. Bernard T. Drew, pastor of the Asylum Hill Congregational Church who conducted the funeral service: "We are always disturbed when a good man dies—and Grant was a good man." He was "one who believed. Not only did he believe, he lived his belief."

Stanley B. Weld, M.D.

Walter J. Keefe, M.D.
1904-1972

Dr. Walter Joseph Keefe of Cupertino, California died at the age of 68 after a short illness. A native of Waterbury, Connecticut, Dr. Keefe practiced medicine in Hartford for over 36 years. A pharmacist in his early days, he was a graduate of Holy Cross College in Worcester, Massachusetts, and the University of Maryland.

Following a residency in Eye, Ear, Nose and Throat at Brooklyn Eye and Ear Hospital, he practiced his specialty in Hartford until World War II. During the war he served as a Commander in the United States Navy Medical Corps.

Dr. Keefe was a Commissioner of the Board of Health in Hartford from 1939 to 1943, and served on the Joint Committee of Pharmacy and Medicine for the state of Connecticut from 1956 to 1966. In 1960, he became President of the staff at St. Francis Hospital in Hartford.

He left Hartford in 1967 to live in California where some of his children are located. He retained his standing as emeritus-otolaryngologist at St. Francis Hospital.

Dr. Keefe is survived by his wife, the former Kathleen Dougherty of Waterbury; and five children, Dr. Richard Keefe of Cupertino, California, Dr. Thomas Keefe of Rockville, Maryland; Walter of Oak Park, Illinois; Arlene of Albany, New York; and Jean Marie of Los Angeles, California. Also surviving are two grandsons the three brothers, Frank of Waterbury; Bernard of Madison, Connecticut; and Joseph of Miami, Florida.

James J. Hennessy, M.D.

In Memoriam

Caulfield, Ernest, Johns Hopkins Medical School, 1920. Dr. Caulfield was a pediatrician (retired) in the Hartford area since 1920, and was chief of Pediatrics at Hartford Hospital from 1945-48. He served his internship and residency in New Haven, and later became a lecturer in pediatrics at the Yale Medical School, attaining the rank of assistant clinical professor. He was a member of the Hartford County Medical Association and the Connecticut State Medical Society. Dr. Caulfield died May 16, 1972, at the age of 78.

Kilbourn, Austin, Yale Medical School, 1911. Dr. Kilbourn was a general practitioner in the Hartford area since 1923. He served as lieutenant of field artillery in France in World War I and on his return from France he started to practice medicine in Hartford. He was a member of the Hartford County Medical Association, the Connecticut State Medical Society, and the American Medical Association. Dr. Kilbourn died May 22, 1972, at the age of 83.

Sprague, Charles H., College of Physicians and Surgeons, 1904. Dr. Sprague was an internist in the Bridgeport area since 1904. He became an attending physician after World War I in Bridgeport Hospital, and was appointed chief of staff in 1944. He was a member of the Fairfield County Medical Association, the Connecticut State Medical Society, and a life member of the American Medical Association. Dr. Sprague died April 12, 1972, at the age of 92.

Letter To The Editor

Members of the Society are invited to communicate with the Editor of CONNECTICUT MEDICINE expressing their opinions or giving information as to any matter of interest to the members. The Editorial Board reserves to itself the right to select the communications or excerpts therefrom that will be published and to reject others. As with other material which is submitted for publication, all correspondence will be subject to the usual editing and possible abridgment. Material should be typewritten double spaced, and be of reasonable length (not over 1½-2 pages). Address all correspondence to: THE EDITOR, CONNECTICUT MEDICINE, 160 St. Ronan Street, New Haven, Connecticut 06511.

To the Editor,

Isn't there anyway you can persuade the administration of the University of Connecticut Medical School to have their graduates pursue (after one year internship) general practise or family medicine for graduates from Connecticut? It must cost the taxpayers $20,000 a year to educate one student. Don't they owe the citizens of Connecticut some medical care? For two to five years the medical problems of 50 towns would be continually and medically cared for.

Hundreds of doctors are hiding in internship and research on grants etc., apparently with no thought of delivery of medical care.

Yours,

Bernard S. Dignam, M.D.
Yale '35
133 Pearl Street
Enfield, Conn. 06082

Welcome, New Members

Hartford County

Jose F. Alvares, M.D., Mt. Sinai Hospital, Hartford, Conn. 06112.

Rudolf W. Bee, M.D., 99 W. Main Street, New Britain, Conn. 06051.

Sister Mary H. Blakeslee, M.D., 27 Park Road, West Hartford, Conn. 06105.

Richard M. Bridburg, M.D., Institute of Living, Hartford, Conn. 06106.

Jose L. DaCosta, M.D., 631 Park Street, Hartford, Conn. 06106.

Kenneth A. DeCarolis, M.D., 85 Jefferson Street, Hartford, Conn. 06106.

Joanna S. Gerber, M.D., 3 Earls Court, Farmington, Conn. 06032.

William H. Gerber, M.D., 1005C Farmington Avenue, West Hartford, Conn. 06107.

Thomas W. Grace, M.D., 60 Gillett Street, Hartford, Conn. 06105.

Sobhy L. Ghabrial, M.D., 342 Main Street, Manchester, Conn. 06040.

William J. Hewett, M.D., 85 Jefferson Street, Hartford, Conn. 06106.

Khurshid Khan, M.D., Cedarcrest Hospital, Newington, Conn. 06111.

Paul G. Pentz, M.D., 200 Retreat Avenue, Hartford, Conn. 06106.

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24th Annual Workshop and Scientific Meeting
Sheraton Plaza, Boston
October 18—Wednesday (9:30 a.m.-4:30 p.m.)
"Multidisciplinary Approach to Patient Care"
Sheraton-Park Plaza, New Haven
April 24, 25, 26, 1973
181st Annual Meeting of the Connecticut State Medical Society
Hartford

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October 9-11—Monday-Wednesday
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International Society of Internal Medicine
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10th Cancer Chemotherapy Conference
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PEDIATRICS

November 15—Wednesday
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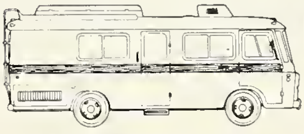

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Connecticut Medicine

Connecticut State
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Volume 36/August 1972/Number 8

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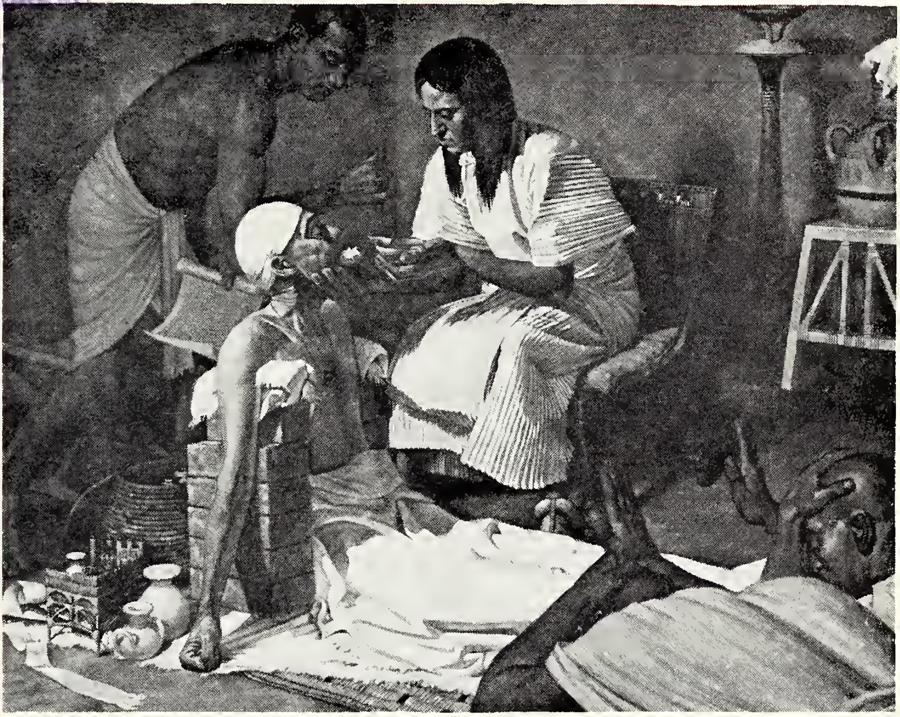

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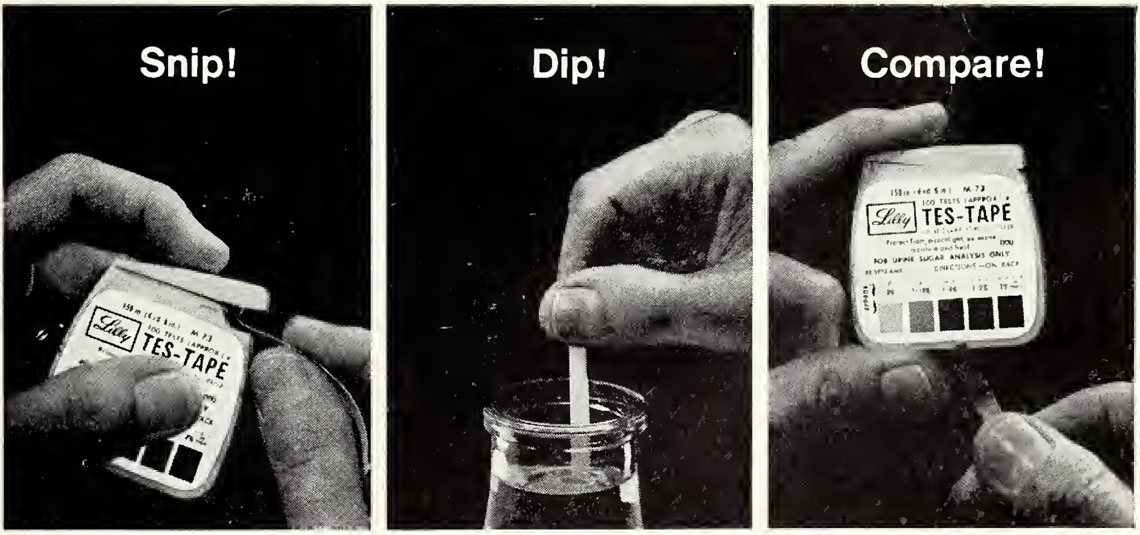

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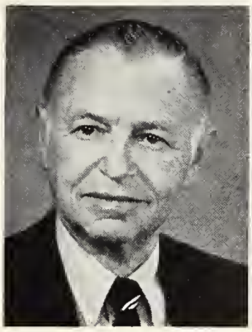
THE PRESIDENT'S PAGE



At the risk of seeming to forsake a principle long held sacred by organized medicine, I would submit that it is high time that we "lay the ghost" of 'private, fee-for-service' as the only *ethical* form of practice, and face up to the real world. There was a time when the American Medical Association took the position that closed panel group practices were unethical, but it has long since abandoned that position in the face of increasing numbers of such panels. We have always believed that every physician had the absolute right to determine the value of his own services and to set his fees accordingly. But, at a rapidly increasing rate, this absolute right has been encroached upon by third party payors, peer review committees, and fixed fee schedules.

With the growth of consumerism, this encroachment can be expected to be speeded up. Government has manifested a considerable interest in physicians' fees as a factor in the rising cost of health care, has selectively dealt with them under Phase II in a discriminatory manner, and may be expected to apply even greater pressures in the future.

While we have all enjoyed the uninhibited independence of private practice, and should like it to continue unchanged, it is irrational to expect that it will. This is not to imply that private practice will disappear from the scene overnight, or even that this will necessarily happen universally throughout the country, but it does mean that for large segments of the population fee-for-service will cease to exist uninhibited. Failure to recognize that this is a fact of life can only lead to perpetual frustration and a schizoid state.

It may sound heretical to state these views when it is still the official position of our Society that it does not approve of any system for the delivery of medical care which infringes on the right of the individual physician to determine his own fees. But heresy is no worse than self-delusion which refuses to see that, all around us, that right has been abrogated. Many of us continue to conduct our practices as we always have and may even be able to do so well into the future, but most certainly many of us will find that, as time passes, our freedom of action in this regard will become more and more circumscribed.

If this be so, we can, individually, submit to the inevitable, and agree to whatever rules of the game are prescribed for us by those in a position to write the prescription. Or we can anticipate the advent of such changes in the rules and attempt, through negotiation, to obtain those most favorable from our point of view. If the latter course seems more desirable than the former, this is a potent argument for building a strong state and a vigorous national medical organization, for only then can physicians speak with sufficient authority to make their demands meaningful. If this sounds like a plea to all physicians to join their county and state medical societies and the AMA, it most decidedly is!

David A. Grendon, M.D.
President

Melanocytoma Tumor

W. M. Schardt, M.D. and S. A. Milewski, M.D.

Synopsis-abstract

Small deeply pigmented tumors projecting from the optic disc should be treated conservatively as they may represent retinal pigment hyperplasia or melanocytoma tumor, the benign character of which has been established. Some of these lesions produce vision deterioration and enlargement of the blind spot. Visual deterioration is due to macular edema which may take as long as six months to absorb. Lesions must be watched and only if steady progression is observed should enucleation be considered.

Melanocytoma tumor, though described many times in the past eight years, is still relatively rare, and although it has been proven to be benign, it is too often mistakenly diagnosed as a malignant tumor and the eye is enucleated. Zimmerman and Garron first called attention to a deeply melanotic pigmented, slowly growing tumor of the optic nerve head which they called "melanocytoma". They published their observations, and clinical criteria to differentiate the melanocytoma of the optic nerve from a juxtapapillary malignant melanoma of the choroid that invades the optic papilla. Dr. Cogan disagrees with the term of melanocytoma, and suggests a magnocellular nevus of the nerve head; that indicates the pathology and benign nature of this tumor. Dr. Blodi and his associates recently described a benign neoplasm of the retinal pigment which occurred near the disc of a seventy-six year old woman. The ophthalmoscopic picture was that of melanocytoma, and the benign character was emphasized. The following two cases we feel should be added to the list of growing number of published cases of melanocytoma which are under observation.

Report of Cases

#1—A forty-three year old caucasian female nurse, Mrs. J., was seen in the office because of vision loss with a "light spot" in front of the left eye of two weeks duration, 7 years ago. In these past two weeks her vision had gradually returned. There was no pain in the eye and the eye had never been red. The patient was not on any medications and her general health was good. There was no history of chronic disease such as diabetes or hypertension of trauma to the eye. Examination revealed both eyes to be white with normal extraocular motility and normal pupillary reactions. Vision in the right eye was 20/20 with —3.00 sphere —0.75 cylinder axis 175, and 20/40 in the left eye with —3.00 sphere —0.50 cylinder axis 180. Intraocular tension was 14 in both eyes. Fundus examination was normal in the right eye but in the left there was a darkly pigmented very slightly elevated lesion in the upper and nasal quadrant of the optic nerve. There was no papilloedema but the edges of the disc were blurred. No hemorrhage was seen but there was macular edema with a partial star like configuration, see photo #1. Visual field showed an enlargement of the blind spot, see field #1. A tentative diagnosis of malignant melanoma of the choroid pressing upon the optic nerve was made. Because of the location of the lesion and its atypical appearance, the patient was seen by another ophthalmologist in consultation. He had five colleagues look at the lesion and four voted for malignant melanoma and the fifth thought that the condition should be watched further, that this might not be a malignant condition and enucleation should be postponed. With these conflicting views in mind the patient was sent to see Dr. Algernon B. Reese in New York who diagnosed the lesion as a melanocytoma of the optic nerve and recommended following this condition at close intervals. Acting upon Dr. Reese's advice the patient was treated conservatively and it was noticed over the next several weeks that the edema subsided and the vision returned to 20/20 in each eye with normal visual field and normal intraocular tension. The lesion of the optic nerve has not changed since the original examination.

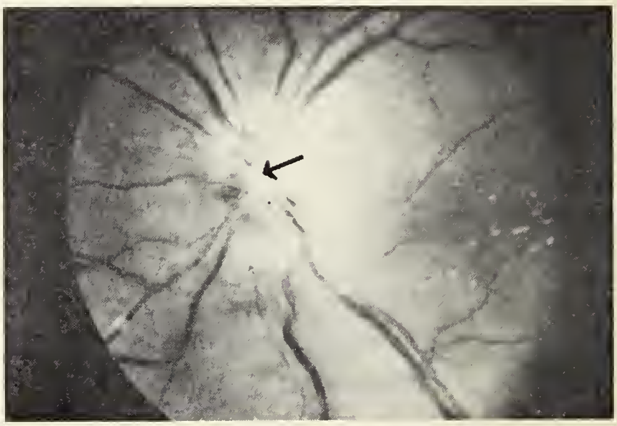


Photo #1

Mrs. J's family background was from the Mediterranean area, and while she was born in this country she was dark complexioned with dark brown eyes.

#2—A nine year old white female child with blond hair and blue eyes was seen in the office four years ago complaining that three of four weeks before her office visit she noticed a "black spot" in front of the left eye, and during the week prior to being seen her vision became very poor in this left eye. There was no history of any trauma to the

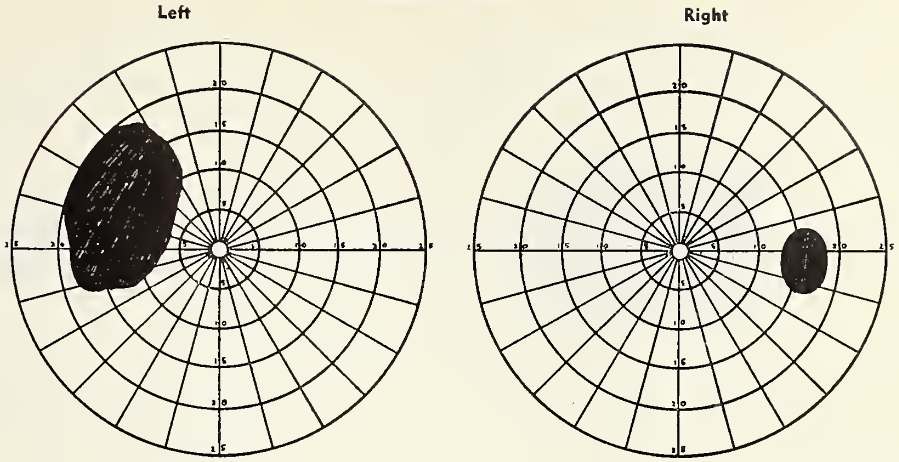
---

DR. W. M. SCHARDT, Chief of Ophthalmology, Manchester Memorial Hospital, Manchester, Conn.

DR. S. A. MILEWSKI, Associate in Ophthalmology, Manchester Memorial Hospital, Manchester, Conn.

Field #1

CENTRAL FIELD



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eye and there had never been any pain or redness of the eye. The patient's general health had been good, and the child was not on any medications. Examination showed the vision in the right eye to be 20/20 without correction, and 10/200 with and without correction in the left eye. Intraocular tension was 16 in each eye. The visual field showed a greatly enlarged blind spot with central scotoma in the left eye, see field #2. Pupillary reactions and extraocular motility were normal. Fundus examination showed a raised pigmented lesion about 1/3 a disc diameter in size pressing on the superior temporal border of the left disc with one large vessel crossing over this pigmented lesion, macular edema was present, see photo #2.

It was felt that a diagnosis of a malignant melanoma had to be ruled out in this case, but due to our previous experience with a rather similar lesion in the case of Mrs. J., patient was sent to Dr. Reese. Dr. Reese and his staff examined her under general anesthesia and recommended to keep her under close observation to see if any further changes would take place, especially in view of marked visual disturbance and field change. He felt that this probably represented either hyperplasia of the retinal pigment epithelium or a melanocytoma although the appearance was atypical of either. The lesion, however, did not appear to be malignant, and only if steady progression could be established was enucleation to be considered. For two to three months after the initial examination the patient developed a slightly increased amount of macular edema and vision remained greatly depressed. However, within six months the edema had subsided, there was some sprinkling of pigment in the macular area and vision had improved to 20/70; the pigmented lesion had remained the same in size but the large vessel had disappeared. The patient's vision has greatly improved over the years, but there has been no change in the size of the pigmented lesion. When last seen four years after the initial visit vision was 20/25 in the left eye with a normal visual field and normal intraocular pressure. This patient, also atypically, came in complaining of loss of vision in the affected eye, but in distinction to the first case this patient was fair complexioned, blond haired, blue eyed and of central European background.

Comment

Zimmerman and Garron in 1962 originated the term melanocytoma. They presented 34 clinical patients and one post mortem case. They felt that this was a benign tumor which tends to occur in very deeply pigmented individuals, including negroes and other non-caucasians, in which races malignant melanomas are uncommon. The tumor seldom produces any effect on the vision, but characteristically caused an enlargement of the blind spot. These slow growing lesions do not change even after many years of observation. Extraocular

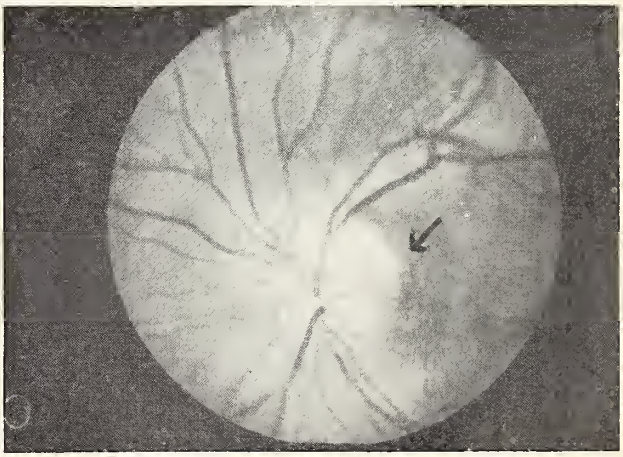
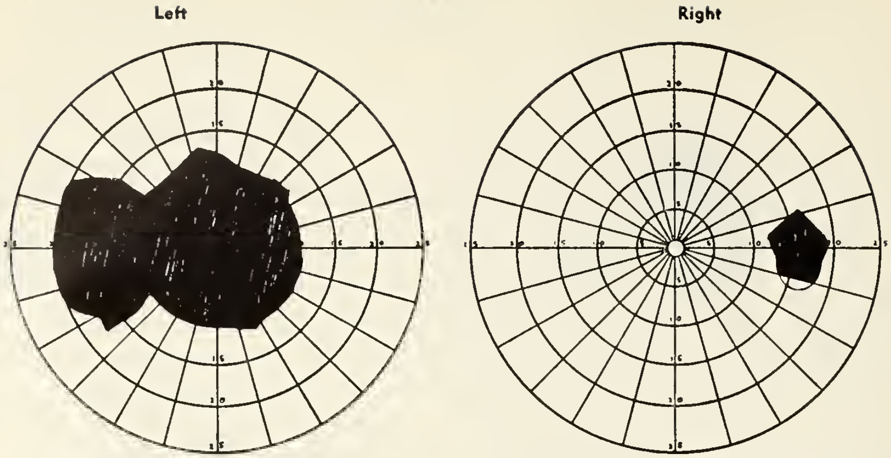


Photo #2

Field #2

CENTRAL FIELD



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extension and metastases are unknown. Melanocytomas usually appear as small deeply pigmented tumors projecting forward from the optic disc, slightly eccentric, spilling over onto the adjacent retina.

Microscopically melanocytomas show cytological uniformity with a maximum amount of melanin in each cell. This melanin has the same characteristics as seen in normal uveal melanocytes. When these cells are bleached by appropriate means, the cells resemble the normal melanocytes with normal structure, no signs of invasiveness nor wild growth. The cells are polyhedral with abundant cytoplasm and small nuclei.

It is thought that these changes in pigmentation are congenital in origin occurring in normal uveal melanocytes around the optic disc. These nonmalignant changes in the cell (maximum filling with melanin) will probably be found to be a defect in biochemical control of the normal formation and/or storage of melanin.

The lack of pleomorphism and mitotic figures resulting in regular structure differentiate these tumors microscopically from malignant melanomas.

Summary

Two cases of melanocytoma were presented; one in a 43 year old caucasian female of Mediterranean background, which has been followed for 7 years. The other in a fair-complexioned blond-haired, blue-eyed girl of central European background. She has been followed for 4 years. Both cases are slightly unusual because both patients complained of loss of vision, and had accompanying visual field changes. Clinically there was a raised pigmented lesion found at the optic nerve, with associated optic nerve and macular edema. The edema gradually subsided but it took almost 6 months to do so in one patient. Vision in both patients is now excellent, and the size of the tumors have not changed, thus two eyes have been saved needless enucleation.

(We are indebted to Dr. A. B. Reese and his associates for their expert consultations in these two cases.)

Key Words

Melanocytoma tumor, benign, conservative treatment, macula edema, visual deterioration, central scotoma, enlargement of blind spot.

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The Brotherhood Approach To Alcoholism

Norton G. Chaucer, M.D., M.P.H.

It has recently become clear to people concerned with addiction problems, as well as other social problems, venereal disease, out-of-wedlock births, obesity, compulsive gambling, that the purely medical approach to these problems is rarely successful. Alcoholism as a "disease"—a change from alcoholism as a criminal offense—is giving way rapidly to alcoholism as a behavior problem.[1]

In Hartford, Connecticut, for several years the problem of the homeless male alcoholic, and especially the black or Puerto Rican alcoholic, has been painfully evident. These men frighten the people in poverty neighborhoods. They cause severe environmental and housing deterioration, urinating in apartment hallways, disposing of broken bottles in alleys and school yards, sleeping in basements, or vacant buildings, setting fires and otherwise causing major damage out of proportion to their number. Neighborhood poverty organizations and social service approaches have failed to relieve this problem, or to establish meaningful approaches to the vagrant alcoholics.

In 1969 an ex-alcoholic, Mr. Willie Cousin, approached the City Director of Health concerning a new approach to this problem. Mr. Cousin stated that he was an ex-alcoholic and very much concerned about the problems of black alcoholics. Also, he was concerned about the severe illnesses and deaths among the alcoholics of his acquaintance. It was Mr. Cousin's idea that if these men (and women) were approached directly by someone like himself—an ex-alcoholic deeply concerned about his fellow men—that many of these people could be helped. He wished for medical assistance, and official backing, as well as help in developing his ideas further.

Since the Health Department was already cognizant of the problem, and attempting to develop a public program of control, the appearance of a concerned neighborhood person was welcomed. Mr. Cousin was referred to the local Council on Alcoholism for assistance in establishing a black branch of Alcoholics Anonymous, and for enrollment in their training course for persons working with alcoholics. In time, Mr. Cousin and other men recruited by him took these courses and became qualified alcoholic counselors.

Meanwhile, Mr. Cousin, a tremendous organizer, developed what he called the Brotherhood Club. He found that, as he approached his alcoholic friends and neighbors, they needed some substitute for drinking. He organized a series of evening meetings, four or five days a week, including one AA meeting, one educational and social meeting (films and discussion), one purely social meeting, with group participation in cooking and consuming a simple meal.

As the program developed, a warm caring relationship grew up between these men and women. Alcoholics achieving control offered to sit with clients losing control, to take them to hospitals or clinics if needed. They learned to use all the community facilities as appropriate.

Approaches were made to the City and State Welfare Departments for referrals and financial support of their clients. Approaches were made to the courts, and to the local (State) jail. The regional mental hospital, as well as local mental health facilities, were made aware of the program and became sources for referral or for mental health assistance. Somewhat later, the general hospital emergency room physicians were apprised of the Brotherhood Club and became more accepting of alcoholic clients brought to them in acute and often severe alcoholic crisis. They agreed to medically screen, and in a few cases to admit alcoholics for

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[1] Plaut, Thomas F. A.: "Alcohol Problems" Oxford University Press, 1967 pp. 42-45.

care. The change in attitude was based on the fact that following screening or care, the patient would be referred to the Brotherhood Club for long-term assistance.

As the program developed, a City position with a city telephone number was added in one of the City's neighborhood field offices. There was now a direct and official recognition and assistance of the program. Health Department physicians and public health nurses offered their professional help in examining patients, assisting in referral if needed, and in direct care and counseling if appropriate.

The new program began to be recognized as a new and valuable community agency. Support was sought and in some measure gained from various charitable foundations, as well as a few local industries.

Later still, a vacant portion of a City-owned building was converted—using mostly Brotherhood Club members' labor—to a 22 bed residential facility for male alcoholics. Food was obtained at cost from the nearby University-McCook Hospital kitchen.

Using neighborhood and poverty program resources, the Brotherhood Club was incorporated by a neighborhood legal aid attorney. A strong and representative Board of Directors was recruited, giving the program status with potential donors, as well as association with professional agencies.

The Brotherhood approach to alcoholism is about two years old. In this short time 259 men and 132 women have been helped in some substantial way by the program. Clients are brought to a major care center (State Mental Health Hospital, for example) and are picked up by a Brotherhood member when ready for discharge. Clients have over and again voiced their feeling of being really wanted, of knowing that others are really concerned about them, where before they had abandoned hope of being accepted into any aspect of sober society.

This is entirely a caring program. Some of the newly sober clients, prior to establishment of the residential center, have stayed close to a Brotherhood member day and night during the early weeks for fear of a return to drinking and vagrancy.

The last facilities to be developed by the Brotherhood Club have been rehabilitation and trial employment agencies. One is a warehouse converted to a furniture repair and storage facility. Another is a small moving operation (two trucks—used largely by and for welfare clients). Another is a storefront for marking, checking, and delivering garments for dry cleaning. The actual cleaning is done by contract with large local cleaning establishments.

Currently, there is a strong central staff of 12 counselors. The Board meets monthly. The budget for all these activities is about $5,000 monthly. This is met through fees in the residential center, through donated funds (charitable foundations and local industry) through governmental funds (City and State) and through project grant funds (applications pending for funds from the National Institutes of Mental Health).

The attitude toward the poverty alcoholic has changed from severe pessimism to optimism. Because of the rehabilitative activities especially, the program has received substantial community notice and acceptance.

While the people-to-people caring and brotherhood approach needs sound medical and mental health backing, it is essentially a non-medical program. The ingredients for such a program are present or available to most communities. One concerned ex-alcoholic can begin such a program, with good backing from the health and social welfare agencies. Recently, the same type of help is being tried for the drug abuser. This problem too may give way to a direct approach of people concerned for one another, and caring for one another.

Concerning the hard statistical measurement of success, this program and others have difficulty in defining cure (or success). Alcoholism is a lifelong condition, alleviated rather than cured. For the recent nine month period during which facilities were essentially complete, 1758 individuals made contact with the program in some way. About half (814) left after the first brief contact. Some 20% (362) have remained in the program, and attend at least three meetings per month. Over 7% (134) are known to be continuously sober and returned to gainful employment.

This neighborhood, caring approach to alcoholism keeps the door open. Of those who made only one brief contact, many will return another day. Because it deals with poverty and even vagrant alcoholics, these modest successes are especially significant.

In terms of the poverty areas of the City, the Brotherhood Club has had a significant impact on alcohol misuse. The small group returned to full sobriety seem to be reasonably permanent successes. A failure is merely a failure on the first, second, or third try. The aim is to continue to siphon off cured people from the very large poverty alcoholic population.

Delta Phalanx

Enzo J. Sella, M.D.

Delta phalanx is a rare congenital anomaly of the hand and foot. G. Blundell Jones[1] suggested the term in 1964 when he reported for the first time five such cases. Watson and Boyes[2] in 1967 studied 154 patients with hand and foot deformities and found 22 with this condition. Three patients had involvement of multiple digit rays, thereby resulting in a total of 28 instances of delta phalanx in their series. Only 27 cases of this angular deformity could be found reported in the English orthopaedic literature.

In Watson and Boyes' series,[2] the proximal phalanx of the thumb was the most commonly affected site. The ratio of male to female was 2:1. The purpose of this communication is to review the salient clinical findings and to report a case and its management.

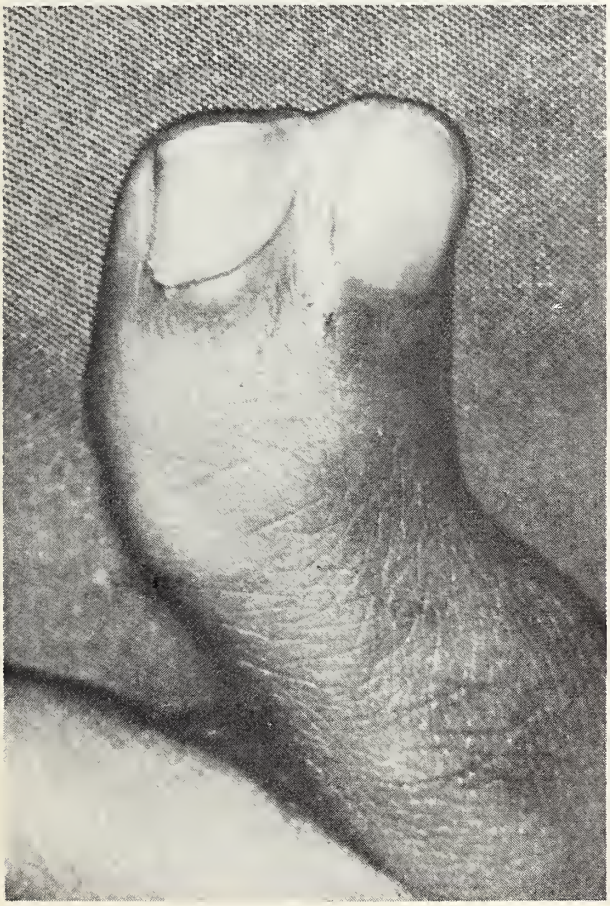

Figure 1
Dorsal view of left thumb. Duplication of distal phalanx. Radialward angulation.

Illustrative Case

B.M., a 12 and ½-year-old Negro female, came to the Newington Children's Hospital to "have her left thumb straightened out." The deformity had been present since birth. The maternal pregnancy, labor, and delivery were unremarkable. Her chief complaint was the unsightly appearance of the thumb (Fig. 1). She had good sensation and motion of the affected digit, with a strong pinch and good apposition to the little finger. Both mother and daughter desired the correction for cosmetic reasons.

Treatment

At surgery,* the supernumerary ray was amputated subperiosteally. A transverse osteotomy through the base of the proximal phalanx of the left thumb was performed, thereby interrupting the longitudinally-running epiphysis. To correct the angulation, a wedge-shaped graft was then fashioned from the excised bone and inserted into the osteotomized phalanx with its base toward the contracted side. A medial collateral ligament for the D.I.P. joint was constructed by advancing a flap of capsule from the medial aspect of the thumb. Fixation was obtained with a Steinman pin passed through the distal and proximal phalanges, engaging the bone graft. Postoperative splinting for 4 to 6 weeks was carried out (Fig. 2).

Discussion

Delta phalanx is a term applied to a rare, congenital deformity of tubular bones of the hand and foot. It is a manifestation of polydactylism. By definition, it occurs only in bones with a proximal epiphysis, i.e., phalanges, 1st metacarpal, and 1st metatarsal. The defective epiphysis, rather than describing its normal horizontal course, runs in a proximal-to-distal direction, (Fig. 3) giving the bone its triangular or semilunar shape—hence, the name "delta phalanx".

The epiphysis appears to be tethered to the side, as if drawn up by the supernumerary ray. The peculiar arrangement of this epiphysis makes longi-

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* Dr. H. K. Watson was the primary surgeon.

tudinal growth of the digit impossible and progressive angulation probable. Angulation indeed takes place and is usually on the side of the tethered epiphysis.

No spontaneous correction has been reported. Splinting is futile, according to Jones. Treatment consists of surgical correction as soon as the digit has attained sufficient size to make operation technically feasible.

The limiting factor in treatment is the tightness of the soft tissues on the contracted side.[1] Z-plasty of the skin was required to obtain full correction in our case.

Recurrence in varying degrees of angulation requiring a second definitive osteotomy in subsequent years is possible in some cases.[1]

Synopsis-Abstract

A case of delta phalanx is presented. The characteristic features and treatment of this congenital angular deformity are discussed.

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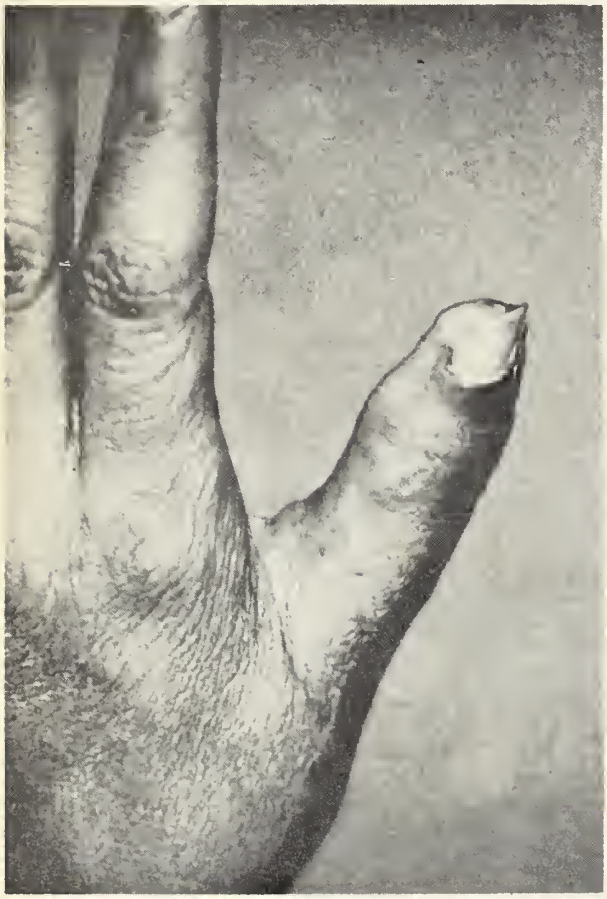

Figure 2

Note normal alignment of thumb. Complete correction of radialward angulation.

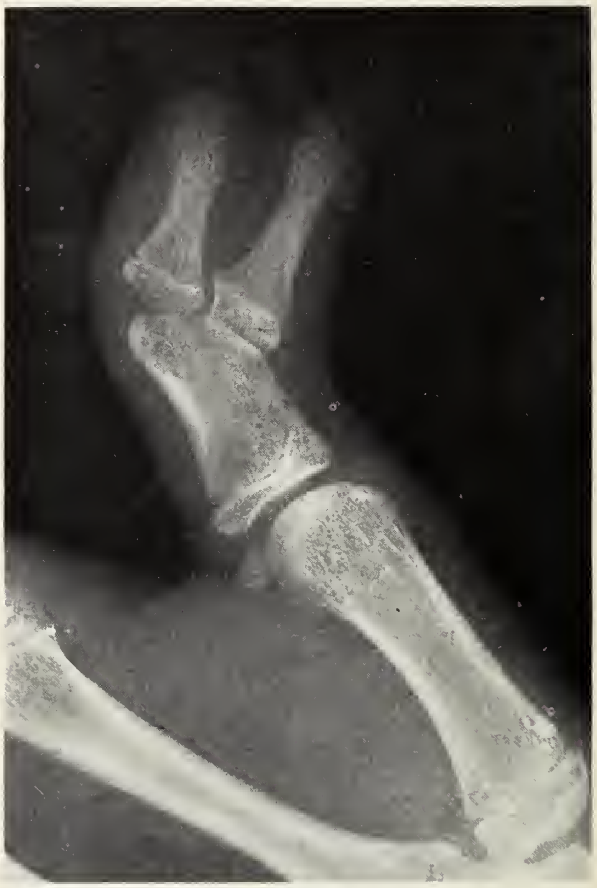

Figure 3

Delta phalanx of left thumb. Note lateral one-third of proximal phalanx curving distally.

Connecticut Medicine

Editorials

Managing Patient With Angina Pectoris

The goal of therapy in angina pectoris is to keep angina under control with but a minimal sacrifice of essential activities. We need to make the patient feel that he can control and modulate the discomfort by making certain modifications in his life-style without foregoing anything really vital and as far as possible with independence from the doctor and from the need of multiple medications. The tempo of activity is a decisive factor in provoking angina. By slowing the tempo ever so slightly one can still accomplish a full complement of work without incurring the penalty of chest discomfort. It is mandatory for the patient to stop smoking permanently. Big meals should be avoided, generally the calories should be reduced and the total calories distributed among a number of smaller meals. This is a good way to reduce postprandial angina.

Two myths make the treatment of angina with nitroglycerin difficult. One is the superstitious belief that the less nitroglycerin consumed, the less severe is the underlying disease. The other is the fear that one can become habituated, so that the drug will lose its effectiveness. However, if a patient reaches for nitroglycerin in anticipation of a chest discomfort he usually finds he can live very well without too great restriction and usualy without requiring other medication for the control of pain.

Lown[1] does not see any sense in being on a fixed schedule with long acting vasodilators. In the first place it seems needless to initiate treatment with a long acting vasodilator a number of times a day when one or two nitroglycerins daily effectively controls anginal symptoms. In this way the patient learns to adapt the use of nitroglycerin to his varying needs. Why should a patient take a vasodilators for weeks when he doesn't really need it. Knowing he has within his reach instantly an immediate antidote to anginal pain fosters a degree of self reliance and confidence in the face of a long acting illness. Furthermore, continued use of a long acting nitrite can lead to formation of methemoglobin which is a very undesirable cause of reduction in the oxygen carrying capacity of the blood. Only if the patient's requirement for nitroglycerin significantly increases then one thinks of adding a beta-blocking agent such as propranolol.

Drugs, however, are only one component in managing a patient with angina pectoris. His entire life style needs to be modified. This demands close attention to many details. Some advocate a brief period of hospitalization at the outset to make sure an impending infarction is not responsible. Problems such as hyperthyroidism, anemia, polycythemia, increased platelets, methemoglobinemia and the Prinz metal variant can be ruled out.

Details are important even though they seem trivial. Some patients will have angina when they take a morning shower but are not likely to have

THE COVER

MEDICINE IN ANCIENT EGYPT

An Egyptian physician of the Eighteenth Dynasty (1500-1400 B.C.), clothed in clean white linen and a wig, as became the dignity of his status, is confronted with a patient having symptoms of lockjaw (described in an ancient scroll now known as the Edwin Smith papyrus). With sure, sympathetic hands, the physician treats the patient, who is supported by a "brick chair." Directions for treatment appear on the scroll held by his assistant. Specially trained priests observe prescribed magico-religious rites. Egyptian medicine occupied a dominant position in the world of the ancients for 2500 years.

discomfort if they shower at night. A cold bed might induce discomfort and should first be warmed up. If angina is nocturnal, elevating the head posts of the bed by 6 to 9 inches frequently will prevent recurrence of the pain. A hot, humid environment may be difficult to tolerate and an air conditioner in house or office can be helpful. Likewise, going out doors during very cold weather can be rendered comfortable by wearing a mask. This is better than loading the patient with a beta-blocking agent to prevent cold induced angina.

Once the physician has determined that the patient's condition is stable, physical conditioning exercise becomes one of the most important components of a treatment program. Exercise can be provided on a stationary bicycle once we have been satisfied that no arrhythmia is induced by exercise. In the absence of this contra-indication the patient can embark on a graduated exercise program using a stationary bicycle with slowly increasing resistances. The patient, of course, needs monitoring regularly for adverse arrhythmias and if they occur the amount of exercise should be cut back.

No isometric exercises are allowed. A patient who has been on an exercise program for a number of months will often experience a reduction of angina and at times even its disappearance. With this nitroglycerin consumption decreases. Objective evidence can also be seen in the ECG. ST segment depressions will cease to appear at an exercise level at which it previously appeared. In addition, such conditioned patients may also have less ectopic activity.

What is the mechanism by means of which an exercise program improves the anginal patient's tolerance? It has not been shown to be due to increased collateral circulation.[1] However, it has been shown that conditioning diminishes the cardiovascular response to a given physical effort, so that the same level of exercise will be performed at a lower heart rate, a lower blood pressure and a lesser contractile effort on the part of cardiac muscle. It may be noted that these effects are not far different from what happens when the sympathetic nervous system is blocked by beta-adrenergic blocking agents.

All the time the physician needs to encourage the patient to live as normally as possible dispensing only with unnecessary energy expenditure and readily avoidable stresses. Perhaps most important is to encourage an affirmative attitude concerning survival. When these measures are employed properly, it is rare that anyone proves intractable to treatment.

One, therefore, quite infrequently has to resort to bypass surgical vein grafts to alleviate anginal symptoms.—L.H.N.

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New Thoughts On Essential Hypertension

Renin is both an enzyme and a hormone. Its enzymatic role is to act on a circulating substrate in plasma to produce angiotensin I. This is a decapeptide which in turn is converted into angiotensin II. by removing two amino-acids. Angiotensin II. apart from being a potent vasoconstrictor in its own right also causes the release of aldosterone from the adrenal cortex. The result is sodium retention at the renal tubule and restoration of renal perfusion thereby turning off the original stimulus to the release of renin.[1]

In patients with malignant hypertension and severe renal damage, the damaged kidneys continue to produce excess renin despite over-production of angiotensin and oversecretion of aldosterone. Thus, the normal homeostatic mechanisms are impaired, a vicious cycle of more renal damage, more renin production and more hypertension continues. The vascular damage in such patients is in part accounted for by the elevated renin content of the blood as is found in animal experiments. Furthermore, more recent studies have shown that a "substance" isolated from the kidney almost certainly renin, can cause an increase in vascular permeability.[1]

How does this knowledge apply to patients with chronically raised levels of blood pressure who we know have a higher risk of strokes and myocardial infarctions as compared to normal people. Not all hypertensives, however, have this risk. There is a small group of hypertensive patients who defy all statistics by continuing in good health despite blood pressure levels which would prove detrimental to many of their fellows.[2] A possible explanation for this anomaly has been proposed recently by Bruner, et al.[3] This hypothesis is first that this fortunate group of patients with hypertension have low plasma renin activity and second that it is high plasma renin activity that increases the risk of vascular disease.

What then is the role of the renin-angiotensin-aldosterone axis in patients with essential hypertension. It is this problem that Brunner and his group set out to study. They measured plasma renin activity and aldosterone secretion in 219 patients with essential hypertension, none of whom were on drug therapy and compared their results with those obtained in 52 normal persons. Among the hypertensive patients, 52 percent had normal plasma renin activity and aldosterone secretion, 16 percent had raised plasma renin activity and 27 percent had plasma renin activity below the normal range. The levels of blood pressure were similar in patients with low and normal levels of renin in the plasma, but appreciably higher in those with high plasma renin. This last group also had a higher incidence of hypertensive retinopathy with higher levels of blood urea and lower levels of plasma potassium than did the other two groups.

But an important clinical difference was observed in the patterns of vascular disease in these patients. Nineteen of the 219 had a stroke or, an MI either before or after the period of study. No patient with low plasma renin suffered either of those complications whereas 11 percent of the normal renin group did. So far there is no good explanation for the suppression of plasma renin in patients with essential hypertension, for in most cases aldosterone secretions and excretion is either low or normal and it has been suggested that perhaps another and unidentified mineral, corticoid is responsible.[4] Whatever the mechanism, it would appear that patients with essential hypertension and a low plasma renin are in some way protected from the vascular ravages of hypertension. The observation, however, does provide a possible explanation for the benign natural history of hypertension associated with primary aldosteronism, where the oversecretion of aldosterone suppresses renin output.

If Brunner and his colleagues observations are confirmed, several important sequelae may emerge. First, it may be possible to select those patients with essential hypertension whose levels of blood pressure needs to be permanently lowered. Somewhere between 10-15 percent of the adult population in the western hemisphere have raised levels of arterial pressure and drug treatment of this group as a whole presents obvious economic and medical problem. Secondly, it may point the way to the development of hypotensive drugs which especially lower plasma levels of renin. Finally, the treatment of mild hypertensives with diuretics for long periods must be questioned again for these agents are known to increase plasma renin levels.—L.H.N.

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Clostridium Perfringens Food Poisoning

The term clostridium perfringens food poisoning refers to a gastroenteritis with symptoms appearing on the average of 12 hours after food contaminated with large numbers of these organisms has been consumed. Symptoms include abdominal cramps and diarrhea with nausea only occasionally. Vomiting usually is not a factor nor are constitutional symptoms such as headache, chills, or fever associated with true infection. The disease is generally mild, self-limited with symptoms rarely lasting for more than 24 hours. Fatal cases are extremely rare and are limited to the elderly and debilitated.

Loewenstein[1] points out that this infection ranked first in terms of the total number of clinical cases reported in the year 1969, while it ranked second to staphylococcus as a cause of gastroenteritis in year 1970, out of a total of 18,527 cases reported. We must, however, realize that there is a decreased chance of reporting cases, both because of the mildness of the symptoms as compared to illness from staphylococcus and salmonellosis and also because of the fact that a diagnosis by culture requires special laboratory procedures and that the same organism be obtained from many of the cases of an outbreak.

When one considers that only about 1 percent of the cases of salmonellosis are reported it is evident that most Americans have suffered from clostridium perfringens gastroenteritis at some time during their lives and many millions of individual cases and family outbreaks go unrecognized and unreported each year.[2]

There is also a seasonal incidence. It appears that the curve for clostridium perfringens reaches its nadir in July and August. Possible explanations might be that people don't eat in large groups during the summer; that food cooked in large batches such as stew, which often caused clostridium perfringens poisoning, may be eaten less frequently then; also perhaps investigations are carried out less often in the summer and that school associated outbreaks are automatically eliminated in the summer.

Beef and turkey seem most often implicated as specific vehicles. Reported outbreaks of this food-borne illness is primarily a problem of the food service industry. More than twice as many cases are reported as associated with restaurants as with homes, whereas salmonellosis and staphylococcus food pathogens are reported as more often associated with the home. We must, however, bear in mind that such differences may merely be due to decreased likelihood of reporting smaller outbreaks.

It appears that the contaminated food is practically always a meat product that has been boiled, braised or stewed or heat processed in some manner at least several hours before being consumed. After the initial heat processing there is invariably a period of inadequate cooling. The implicated food is then served either cold or warmed but not sufficiently reheated. Apparently this procedure does not kill the heat-resistant spores, drives the oxygen out of the food, and during the cooling process, the spores germinate. Thus if the food is not reheated to a temperature high enough to inactivate the recently multiplied vegetative forms some of the persons who eat it will get sick.

The sources of potential contamination are extremely numerous. The spore can be recovered from many human intestinal sources and heat-resistant strains in the general population varies from 2 to 9 percent.[3] If one includes all strains, carrier rates are as high as 100 percent. The organism has also been recovered from cattle feces, rodent and pig feces in varying amounts. Hobbs found them even in blowflies from many sources and they have also been cultured from all 8 different types of soil.

With the sources of potential contamination so numerous and widespread, it is not surprising that the organism can be isolated from many foods. Thus, Strong, Canada and Griffiths[4] found that 16 percent of samples of American meat, poultry and fish were contaminated with clostridium perfringens. The organism has been isolated also from such diverse foods as milk, fruit, vegetables, spices, dehydrated soups and spaghetti.

Our knowledge about the epidemiology of clostridium perfringens serotype in relation to food poisoning is in its infancy and much more information must be accumulated if this epidemiologic tool is to attain the importance that it has with salmonellosis. Lowenstein has in his communication helped to achieve this goal.—L.H.N.

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Understanding The Nature Of Man

And I gave my heart to seek and search out
by wisdom concerning all things that are
done under heaven. This sore task hath
God given to his sons of man to be exorcized
herewith.—Ecclesiastes.

In an era in which some Americans "waste" Vietnamese, in which Pakistani massacre their countrymen, understanding the nature of man and his works has become a precondition for the survival of our species as well as for the enhancement of the flowering of human individuality. Is man innately a murderer? Freud held that the "very emphasis of the Commandment: Thou shalt not kill, makes it certain that we are descended from an endlessly long chain of generations of murderers whose love of murder was in their blood as it is perhaps also in our own."[1] Or again[2] "The tendency to aggression is an inate independent instinctual disposition in man . . ."

Is it really true that the aggression is an innate independent instinctual disposition of man or is he educable to murder or to altruism depending upon his acculturation? What is known about the power of social psychological determinants of human behavior compels the conclusion that the set of axioms for a theory of human behavior must be based on the assumption that men and women must believe that mankind can become fully human in order for our species to attain its true humanity. Stated another way, a soberly optimistic view of man's potential based on recognition of man's attainments but tempered by knowledge of its frailties is a precondition for social action to make actual that which is possible.[3]

Man's intelligence permits him the conscious choice of goals and so differentiates him from the rest of animate existence. How then do we recognize the nature of man. Two general approaches suggest themselves. In one we study all societies of man in the hope of extracting its essential nature. In another way we can study the interactions between the infant and his social and biological environment as he grows to adulthood.

What is striking is the remarkable diversity of the human behavior evoked by various but viable cultures. The phenomenon of war is unknown to one society, appears in a second only under environmental stress, but is lethal "game" without apparent material benefit in a third. If we explain the murderous raids of Brazilian Indians on the basis of an innate aggression how then can we explain the peacefulness of the Eskimo? Would it not be sensible to begin with the assumptions that men are by nature neither aggressive nor peaceful but rather are fashioned into one or another as a result of a complex interaction between the biological environment, the cultural milieu and the individual experience?

The ubiquity of violence in western society practically guarantees that children are surfeited with opportunities to learn violent behavior. The child sees that violence pays off. He is provided with adult models of violent behavior with whom to identify, television pales beside real life. Learning may not account completely for human aggression but the social forces in contemporary society that encourage its development are so evident that preoccupation with hypothesized biological factors is almost beside the point.

What do we already know? The rapidly growing brain of fetus and infant is excruciatingly dependent on the adequacy of its nutrition. What has become equally evident is that the nutriment of the growing brain required is affective and cognitive as well as alimentary. The extraordinary dependence of the young upon adult care and caring provides both an unparalleled opportunity for mental and emotional development and a period of vulnerability to profound distortion by neglect. Infants in orphanages lag markedly in development despite proper food intake if denied a responsive human environment. To be sure there are gaps in our knowledge of these early developmental sequences just how much stimulation is optimal, just what balance is to be struck between gratification and denial; just what is the best mix between social interaction and time to be alone? We do not understand individual variability sufficiently well to fashion optimal environments for each child. Surely, however, this does not excuse our present failure to provide at least the general requirements shared by all children.

Ignorance but also lack of commitment becomes a limiting factor when children reach the years of formal education. The shortening of available theories of learning has left us unable to respond to individual differences in the way children fashion their personality and cognitive style. The challenge now is no longer to transmit solutions that have been successful in the past but to help our children to acquire attitudes and sets for problem solving that will enable them to meet undreamed of challenges to their capacity.

We have done least well at the task of encouraging humane values based upon the recognition that we are all a single species. The idea of brotherhood is not new but what is special to our times is that brotherhood has become a precondition for survival. It may have sufficed in the past to spur a child to learn for the sheer satisfaction of his own success. Let us learn from what many of our students are telling us, that learning for personal embellishment or for the acquisition of virtuosity no longer satisfies a generation intensely aware of injustice and impermanence. Learning must become a social enterprise informed by concern for others. The adult whose concern extend beyond family and beyond nation to mankind has become fully human.

The study of man takes its meaning from involvement in the struggle for human betterment. We physicians as well as the ministry have in the Oath of Geneva pledged ourselves to work for the best interest of the patient and in the service of humanity. If all men undertake this kind of obligation then knowledge will grow. As it grows it will be the key that unlocks the door to ultimate wisdom. Then we will have a world with people who are truly human.—L.H.N.

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Second And Third Thoughts On The Therapy Of Myocardial Infarction

The general approach to therapy of acute myocardial infarction has changed appreciably in the past decade. This is due in part to increased experience from intensive care of such patients and the scientific philosophy that traditional approaches should forever be questioned and challenged in the light of new data and within the scope of applicability of such data. Any therapy or manner of management which has potential risks for the patient must be validated by means of the experimental method as well as by well designed and controlled clinical trial before it can be recommended for general use.

Let us remember that a number of treatments generally accepted and in wide use today have not been so validated. Only recently, for example, has the indications for pacemaker insertion become clear. The tendency to insert standby pacemakers has grown progressively restricted from 33 in a large university hopsital 3 years ago to 4 recently.

Rectal examination has been found to be a hazard by increasing vagal tone and causing bradycardia and bradycardia induced arrhythmias as well as hypotension. Its safety has not been established in MI and certainly it should be deferred until it is safe.[1,2]

With regard to oxygen therapy, uncontrolled use of 100 percent O_2 has not been established as beneficial nor has it been shown to have any advantage over conventional O_2 therapy of 40 percent concentration by the nasal prong.[3] Furthermore, the administration of O_2 by nasal prong has not been demonstrated to deliver 40 per cent O_2 into the lungs. Here again controlled clinical trial of the effectiveness of O_2 which in theory should be useful would be most desirable. We need to remember that hypoxia is a potent stimulus to coronary artery dilation and so is the converse. Therefore, oxygenation may not augment O_2 delivery to ischemic areas in the myocardium. To be sure, when significant hypoxia exists it should be corrected.

The value of heparin has not been validated. Antithrombotic agents are still in the experimental phase. Some are testing urokinase, other streptokinase, still others butazolidin and more recently aspirin. If we could prevent arterial thrombosis or if we had a method of dissolving an existing intra-arterial clot, a major improvement in outcome of MI would be effected for the arterial lumen would be opened and nutrition of the peri-infarcted "concussed" area could be restored thereby greatly lessening the size of the necrosed area of myocardium. Much study still is required along these lines.

The extent and severity of myocardial necrosis produced within the first hour after coronary occlusion is altered by the use of inotropic drugs.[4] Multiple epicardial electrode recordings disclose that digitalis and isuprel caused more widespread currents of injury and also increased CPK levels. Accordingly, the use of these drugs in the first few hours after acute MI should be benefited by an awareness that they may actually increase the extent of myocardial damage. On the other hand, the negative inotropic effect achieved by beta-adrenergic blockade reduced the severity of ischemic injury and necrosis.

Raising the arterial pressure without increasing inotropy, tends to increase coronary blood flow without increasing myocardial O_2 consumption. This principle has received much recent attention in connection with cardiac arrest devices using diastolic counterpulsation. The most intriguing one is the boot around lower half of the body forcing blood back to the heart. This has proved of great value in the management of cardiogenic shock.

Digitalis merits mention in any discussion of inotropic drugs, especially its action on the peripheral vasculature. Short acting digitalis glyocosides such as quabain or digoxin have an early and significant vasoconstrictor effect both in animals and man. Significant systemic hypertension may result thus constituting an increased afterload for the left ventricle. At times this is sufficient to induce acute pulmonary edema. Such a potential hazard of digitalis in acute MI warrants a reassessment of their effectiveness as a positive inotropic agent. In the early stages of infarction, Abelman has shown that myocardial function is not improved in the first few hours after experimental infarction. Furthermore, intravenous diuretics can cause efflux of potassium from the myocardium and be potentially dangerous in patients receiving digitalis. They may also cause undersirable hypotension.[5]

It is well to emphasize that hemodynamic measurements conceivably from a careful survey of clinical parameters can reveal the extent to which ventricular function is improved, the predicted course altered and chance of survival increased. This should be employed instead of measurements taken from left ventricular catheterization with excessive complications or even pulmonary wedge pressure. There is beginning a tendency to go back to the bedside rather than to rely on complicated technology for information on the hemodynamic progress of our patients.

To be sure, no treatment is routine and with any therapy there is potential for harm as well as good. There appears to be an over-reliance on pharmacologic and technologic intervention. Many of our drugs are metabolic poisons and much of our therapy can be unphysiologic. We must consistently question our fundamental approach to patient care. Flexibility and skepticism about traditional forms of therapy still are essential to good clinical judgment.

Finally is the revived interest on the role of the environment in determining the outcome of acute MI. Mather studied 1,205 episodes of acute MI in men under 70 with a 28 day mortality of 15 percent overall. Of these, 174 were allocated randomly to home treatment and 169 randomly to hospital care. The mortality of random hospital group was 14.2 percent, that of the random house group was 9.8 percent. This difference arose in the first week. The difference is really not significant except that it represents a new trend in favor of home therapy.

Already it is evident that environment other than the hospital CCU merit further in depth investigation. The pendulum may swing away from the recent emphasis upon investigation of hemodynamic effects of acute MI toward greater consideration of studies of environmental nutritional psychologic and hormonal factors.—L.H.N.

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Back To The Bedside: Elegant Digitalization II.

The maintenance dose would be decided every day preferably at the morning examination of the patient. The rate excretion is about 1 unit per day i.e., icc. of tincture or 1 grain of the leaf or 0.1 mg. digitoxin. But this can vary. If the heart rate slows excessively Burch reduces drops of tincture to 12 or if heart rate is still inadequate he raises drops up to 20. Other symptoms and signs of over digitalization are carefully checked with each visit, frontal headache, varing feelings in the vision, anorexia, appearance of cardiac arrhythmia are carefully checked.

If an excessive amount of digitalis is administered under this regime, the amount cannot exceed 1 unit. A little nausea, appearance and reappearance of ectopic beats will be noted and a dose or two can be omitted and maintenance dose somewhat reduced. In general, overdigitalization should not happen with the use of the tincture when the dose can be varied accurately by 1/15 of a unit and when closely watched. When overdigitalization does occur, it is merely evidence of inability to use digitalis properly or evidence of carelessness.

Most patients with congestive heart failure consult their physicians early in the course of their disease and that is the time to digitalize the patient properly. At that time, the patient will not need diuretics and the confusion produced by the action of diuretics or the problems associated with electrolyte imbalance will not exist. With early and proper use of digitalis and the introduction of all necessary therapeutic measures and after instructions of extreme importance including rest, diet, removal of etiologic factors have been emphasized initially to the patient and family, one will find that the patient's cardiac status improves considerably.

Too frequently, the practice is to introduce diuretics too early and when not necessary. Digitalis acts primarily on the heart improving its contractility, whereas, diuretics act mainly on the kidneys. Unless edema itself is producing significant difficulties, diuretics are not necessary. Furthermore, diuretics can only confuse the clinical and pharmacodynamic picture and make it more difficult to recognize the state of full digitalization. Nothing is gained by hastening the elimination of edema fluid generally. Furthermore, it is digitalis and its action on the heart function that is most important and desired.

It is the cardiotonic effect of digitalis that is needed. It is the heart where the fundamental problem lies. Therefore, proper digitalization is important and is especially needed when the patient returns home and attempts to return to a fairly normal life. Once a diuretic is used with digitalis edema begins to disappear with the diuretic, rales subside and dyspnea lessens. It becomes difficult to know what response is due to digitalis and what is due to the diuretic. This renders it difficult to judge the state of digitalization from the pharmacodynamic action of the drug itself.

Furthermore, if kaliuretic diuretics are used, potassium loss progressively increases the sensitivity to digitalis. If a diuretic is necessary the best one is one that spares potassium containing an aldosterone antagonist. This eliminates dangers of potassium depletion and need of potassium supplement. Once sufficient loss of edema has been achieved, the diuretics can be discontinued and an "elegant" state of digitalization established on the basis of the pharmacodynamic action of the digitalis preparation.

Once a patient is receiving digitalis, he must be examined regularly in order to maintain an elegant state of digitalization. The physician can reduce or increase the number of drops of the tincture of digitalis or digitoxin as the cardiac state demands. One must bear in mind that the patient's activity, renal function, diet, will vary the amount of digitalis required to maintain a state of full digitalization. Not to follow the patient regularly can only slowly lead to over or under digitalization.

The proper use of digitalis in congestive heart failure allows one also to use it properly in atrial flutter and atrial fibrillation. Its proper use in these two disturbances is even more impressive and the approach in administration is as simple and essentially the same as described for congestive heart failure.

The final point is to emphasize that resting the sick heart is of paramount importance. Repair of damaged myocytes is a slow process. Therefore, there should be no haste in the course of treatment of the patient. Too rapid diuresis can be fatal. Too early ambulation can not only precipitate congestive heart failure again but also produce fatal cardiac arrhythmias. The physician must take his time and do as perfect a job as possible. During the course of hospitalization many important lessons of future management can be taught the patient and family which will prevent recurrences of heart failure and assist with return of the patient to activity and a proper job.—L.H.N.

Aging And Cardiovascular Disease

As age advances the rate of death accelerates and cardiovascular causes increasingly predominate. Apparently, the circulatory system becomes increasingly susceptible to abnormalities as it ages. But what are the processes that cause such an increased vulnerability? Not only do disease rates increase with age but there occurs also a progressive decline of so-called homeostatic mechanisms. For example, the body's effectiveness in regulating its temperature declines. In addition, the rate and duration of exercise which can be tolerated also declines with age. So does the ability to withstand changes in altitude as well as the effects of gravity incurred in changes from lying to standing. Older individuals are notably less able to withstand many stresses such as surgery than young people.

All the above physiological regulatory functions depend upon the circulatory system to a major degree and their decline is primarily due to changes in the heart, blood vessels, blood, nervous, endocrine, renal and other functions which play a role in controlling and regulating the circulation of the blood. The resting cardiac output, renal blood flow, total body water, appear to decrease linearly with age. The peripheral resistance systolic diastolic and mean arterial pressure tends to increase. Occasionally, there is also a decline in plasma and blood volume. Of course, there is wide scatter among individuals in these variables. Not all individuals develop troublesome atherosclerosis nor congestive heart failure. There are a few people who escape cardiovascular complications or develop them later.

Cardiovascular complications do occur progressively as age advances and are associated in some way with the againg processes. Abnormalities of the cerebral circulation notoriously increase with age. For example, stroke in long standing hypertension is a frequent complication. Even more frequently, psychomotor and cognitive or intellectual function decrease with age. It is thought, however, that decline in mental function is not a result of the aging process per se but rather of cerebrovascular disease, since without hypertension and atherosclerosis, aged individuals do not decline in intellectual and psychomotor function.

Aging and disease are interrelated but just how is yet unknown. When we learn more about the aging process through research, probably the clues to many disease processes will also be revealed. Similarly, as we learn more about the mechanism of disease, processes of aging may then be revealed. It is highly probable that aging and disease interact, one accelerating the other. What then are some of the processes associated with aging which cause the circulatory system's functions to decline and diseases to occur more frequently?

Blood vessels tend to alter in their constituents and properties with age. Connective tissue normally accounts for 40 percent of the body's protein, but total body protein decreases and this is thought to be due to decrease in protein synthesis. There is also a change in collagen so that elastin decreases whereas fibrous collagen increases. This causes vessels to become stiffer. If the carotid sinus should become stiffer and less sensitive to stretch with age, it will affect reflex vasodilatation. The aorta also loses its elasticity and dilates, and with it systolic blood pressure rises.

The vascularity of organs generally tends to decrease with age and capillary density decreases. The best example is in the kidney where renal blood flow and glomerular filtration rate declines progressively with age. This, fortunately, may be improved by pharmacologic agents. As a result of these circulatory changes, disease may be accelerated.

Cardiac function also appears to alter with age. Increasing cardiac output at any level of exercise is diminished and this results in shorter duration of exercise as well as reduced exercise capacity with advanced age. There is also reduced coronary blood flow and investigators are of the opinion that the myocardium itself undergoes changes as well. The density of myocardial fibers decreases and the connective tissue content increase. Changes can be seen in the microscopic structure of the myocardial fibers and their interrelations. In addition, it is noted that the conducting tissue changes its physical and electrical properties. Finally, there is evidence that the flow characteristics of the blood changes with age in that erythrocyte clumping and other effects occur which cause increased resistance to flow as age advances.

A review of the literature of aging reveals that relatively little is known of the fundamental mechanisms involved. Increased research in the processes of aging is much needed and the rewards should be great. Of great significance to the physician is the interrelations of the aging process and disease. We have already seen above from studies of the decline in intellectual and psychomotor functions may be more related to complications of aging, i.e., circulatory diseases than to aging per se. This suggests that as the complication of aging can be controlled, the decline in function and infirmity associated with aging may be significantly reduced.

There is some recent work which suggests that mental functions in senile individuals may be significantly improved by subjecting them to higher than normal oxygen environments. If this can be confirmed, it would mean that cellular structure of the brain has not irreversibly deteriorated and that if oxygen can be delivered then brain function can be retained. This is in keeping with the aforementioned findings that decline with age is often associated with circulatory diseases.—L.H.N.

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Don't Get Scared, It's Too Dangerous

Walter B. Cannon was the first to describe the physiological mechanisms where in behavioral phenomena might promote organic disease. He first described what is now called the "defense alarm reaction" and he postulated the deleterious organic effects of physiological reactions in modern man who is unable to counter environmental threats by physical activity. However, throughout his studies on the physiology of strong emotions Cannon considered only the physiological response of the subject tested.

Herd[1] has now reported his studies on squirrel monkeys. They induced consistent responses to environmental stimuli over periods of many months. The stimuli were giving food to a fasting animal. Noxious electrical stimuli were presented every fourth minute. This raised their blood pressure which persisted after a while even between the stimuli. Their conclusion was that environmental stimuli can induce sustained arterial hypertension in these animals. Apparently, the effects of their behavioral procedures are not due simply to the delivery of noxious stimuli.

All animals received the greatest number of noxious stimuli during the initial stages of their training but arterial blood pressure then was little elevated above control values. However, as training progressed and each animal began to press the lever rapidly, the number of noxious stimuli delivered gradually decreased. Nevertheless, the mean arterial blood pressure rose. Eventually, mean arterial pressure became elevated before, during and after each session even if the noxious stimuli were no longer delivered.

These behaviorial procedures which exert strong control over an animal's behavior also induce marked and persistent elevations in systemic arterial pressure. Perhaps hypertensive and cardiovascular disease occur in susceptible individuals as part of their response to environmental stimuli which have a powerful effect on each individual's behavior. When we reflect that 85 to 90 percent of hypertension is "essential" and that is not based upon renal or adrenal abnormalities, Herd's experiments take on especial relevance in clinical medicine.

In retrospect, Cannon's hypothesis that strong emotions might induce organic disease seems entirely reasonable, but it has taken 60 years to develop behavioral techniques for exerting sustained control over physiological phenomena. The idea stated in Cannon's diary that pathological effects of emotion were due to failure to have normal exit in muscular movement can now be tested prospectively in subhuman primates.—L.H.N.

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Winds Of Change

The rate of change of events, attitudes and of standards is much more rapid than has ever occurred previously. The impact of these upheavals on society as a whole and on any specific individual is more profound than that experienced during earlier historical movements with the possible exception of social and economic revolutions during which there occurred a sudden overthrow of an old system and replacement with a new one.

Compared to revolutions, ours is a relatively slow change but change it is and we can see it clearly in the academic world and the health care system. At one time there was a flowering of the full-time system in clinical departments, progressive increasing penetration of fundamental biologic, physical, behavioral and social sciences into clinical medicine. However, the exponential growth of federal support for research and research training has slowed and this has had a serious effect on every aspect of medical education. There is an increasing fraction of federal resources now devoted to goal oriented research, for example, heart disease and cancer and a correspondingly growing role of administrators, of representatives of the public and of nonscientists in defining these goals. The cry is now for "relevance" in medical education by students, house staff, and even some faculty members, thus loosening up the curriculum.[1]

Such changes are sparked by growing public appreciation of the pivotal role played by academic institutions in sharing health care programs. The public spotlight now shines directly on the entire health industry. People are struggling for the right to health and comfort. These current winds of change blow presently affecting all segments of society. It is, therefore, likely that our professional lives would be undergoing considerable restructuring at this time even without the profound social, political and economic importance of medicine.

One aspect of societal change is the marked turnover of jobs and mobility. This is true in academic medicine as well as among business executives, scientists and engineers. In technological based industry, a man is recruited for a specific program that has a finite lifetime. Upon its completion he moves on to another program, not always with the same company and this process continues until he is obsolete. A similar situation is developing in medical school faculties. Programs are becoming goal oriented. Basic science, out of which all new discoveries come is shunted aside. It is now how to develop a lining for an artificial heart or testing a vaccine. The scientist-physician is becoming scarce. Instead, special teaching programs interdisciplinary, interdepartmental courses, tutoring for underprepared students, special track, new electives. Training programs for nonphysicians health professionals are beginning to make an impact. This needs new teachers, a veritable beehive of directors, planners, coordinators, associate and assistant deans for this, that and the other. Similar situations exist regarding expanded patient care programs, in which the medical schools are involved. All kinds of agencies, public, private insurors are developing myriads of health delivery schemes and academic ties.

Such programs require large numbers of individuals with specific skills. More and more the objective is to recruit a specific person to fill a specific slot in a specific program. Less and less the school or department, as in years gone by, can simply seek a promising individual to strengthen an existing group. The life-span of these new and special programs are brief. They are modified and than disappear only to be replaced by other programs. As a consequence, the institution's needs change rapidly, thereby creating greatly accelerated mobility. There is transience of personal relations and a downgrading of the importance of personal commitments and loyalities. It appears that academic tenure is becoming a casualty of this mobility because of voluntary transferrals of faculty from one institution to another.

Clinical departments are next in line for major shake ups. Many believe that they depend upon and tend to perpetuate past approaches to medical practice. Divisions of primary care on the one hand and of secondary or specialty care on the other are likely to emerge, the latter among organ-system lines. Such organ-system operated interdepartmental groupings are now becoming operational and it is only a matter of time before they become official, at first exist side by side then ultimately replace existing departments.

It is safe to predict that the future system of health care delivery will be more formally tiered than today's system. Primary care will be offered adult and pediatric patients by family physicians and pediatricians. Secondary care will be offered by organ-system oriented specialists operating in groups and utilizing community hospitals. Tertiary care for the gravely ill and for the most complex problems will be offered by subspecialists trained to utilize the most advanced technology usually within university hospitals. As such a system of health care becomes more sharply defined and operational, the pressure on medical schools to reorganize their structures, so that their education products are most appropriately equipped to operate within it successfully will become irresistible. These perturbations are all serious. How can we maximize the benefits and minimize the resulting possible deleterious effects.

The critical problem facing biomedical investigation as federally funded programs become more goal oriented must be confronted. Great care must be exercised not to let the training of scientists become "technique oriented." It is safe to predict that research techniques that are currently useful will be rapidly superseded and an investigator who has become expert at solving a variety of problems using one technique will soon be superseded by another who has mastered a newer, more effective one.

It is now clear that we stand at the threshold of, and in fact, have already begun to experience enormous upheavals in all aspects of our lives, personal and professional. As medical scientists and physicians, we will in addition to our present objective be forced to find ways to strenghten man's ability to adapt to the greater environmental and mental stresses that await him and to reduce the impact of the more profound emotional upheavals to which he will be subjected. We must continuously examine our current techniques, attitudes, organizational framework to allow the physician to take on the more challenging roles of the future. We must be prepared for what Toffler calls "future shock."—L.H.N.

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Surgical Risks Faced By Older Patients

Many surgical procedures associated with little risk in the young and middle-aged patient become hazardous operations in older persons. According to the study by Dr. Sidney E. Ziffren on the outcome of more than 200,000 operations at the University of Iowa Hospitals from 1955 to 1967, the hazard varies. In some procedures such as blood vessel grafts and the repair in patients undergoing surgery for resection and anastomosis of an obstructed small intestine the hazard is high at any age (14.2 percent under 60, 35.7 percent over 80). In appendectomies the death rate was 0.1 percent in younger persons and soared to 16.6 percent in older people. Suprapubic prostatectomy death rate was 0.0 percent in younger persons and soared to 20.0 percent in the elderly.

Dr. Ziffren analyzed 58 procedures that were performed by staff members and residents. In general survival from operation among the aged has improved over the years but not greatly. What has helped are antibiotics and improved methods of anesthesia. The real difficulty arises from the fact that many of the aged suffer from degenerative diseases and accordingly both preoperative and postoperative techniques require continued refinement.

One operation where the patient's age seems to have a direct relationship to the outcome is radical neck dissection where the surgeon may damage the superior laryngeal nerve and this can result in collection of secretion in the pyriform sinuses which may in turn lead to serious pulmonary complications. If acupuncture could be used for analgesia in such instances, the risk to the superior laryngeal nerve would be spared for the patient could talk during the procedure.

Dr. Ziffren questioned the wisdom of subjecting patients over 80 years of age to such operations as radical mastectomy and esophagectomy and added a special warning about exploratory laparotomy for diseases that prove to be inoperable. He urged every effort should be made to exclude the necessity of an operation on these patients because the mortality is high. In some, the high mortality is probably due to the previous poor condition of the patient. Procedures in which this is the case were found to include cholecystostomy, partial gastrectomy (emergency procedures as well as elective surgery) and closure of abdominal dehiscences. The Iowa surgeon suggests one way to avoid this problem with dehiscences would be to take wide bites with heavy sutures through all layers of the abdominal wall.

He points out that patients who have to undergo amputation above the knee usually are suffering from a more advanced degree of arteriosclerosis and this may account for their higher death rate of 16.5 percent as compared with 3.3 percent after below the knee amputations among patients over 80 years of age.

Of interest is his finding that one out of 10 patients over age 80 who has internal fixation of a fracture of the hip still dies. Many of us are aware that a good many of those deaths are caused by pulmonary emboli. Clearly anticoagulation of all these patients is warranted.—L.H.N.

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Fifty Years Of Medicine

Part II.

Louis H. Nahum, M.D.

By contrast with rapid expansion of knowledge that follows a basic discovery, knowledge in a special area might develop very slowly.

Arteriosclerosis is a disease in which the growth of knowledge was slow. We didn't understand the nature of the lesion, how it came about or its association with other diseases. We knew that hypertension and diabetes led to it. We knew nothing about the cause of hypertension nor did we have a way of dealing with it. Slowly two parallel lines of investigation finally gave us a clear picture of the nature of arteriosclerosis.

One line came from epidemiological studies which established a clear correlation between smoking, diabetes, hypertension, certain poisons such as carbondisulphide in the spinning room of rayon workers, gout, hypercholesterolemia and more recently triglyceridemia.

One line came from the experimental laboratory. Dr. Levin Waters at Yale produced lesions in arteries of rabbits by injecting allyl-amide. Burch many years later produced similar lesions in mice with virus induced infections. Burch calls these lesions "tombstones" of past injury. Now the whole complex confusing picture of a disease, associated with so many so-called risk factors has become clear. Two cooperating factors, one injury to endothelium, and one metabolic disorders of lipid metabolism combine to form the arteriosclerotic plaque.

It is true that much has grown up to help the victim from coronary care units to field coronary care ambulances. And this is good. As a result of our expansion of knowledge and technology medicine has really become a three tier adventure. First is the recognition of the ailment and its needs of specialized care. Second is the use of specialized environment and personnel to treat the immediate threats to life such as a coronary care unit. Third is the tier of specialists, anesthesiologists, cardiovascular surgeons, technical tools and equipment to perform operations that could prolong life.

In this last stage we have different problems in different organs. In the brain, for example, as in aorta-coronary bypass, they need to localize the lesion with radiology, arteriography and radioactive scanning. Then they resort to the microscope to repair the vessel because its caliber may be very small —microscope surgeons are growing up to perform these essential life saving tasks.

Obviously if we knew how to slow down the arteriosclerotic process or if we knew how to prevent thrombosis many of these highly specialized technics might be avoided. We are very far from prevention as yet. To prevent the initial "tombstone" we would need to control virus infection, poisons in the environment, diabetes, gout and smoking. To prevent the atherosclerotic plaque we would need to prevent lipoid disorders of the blood, clearly a very difficult task.

Technology

The development of instruments to assist in our deeper understanding of fundamental phenomena involved in basic biological processes, have made incredible progress in the last decade. A number of these accomplishments have been achieved through the ingenuity of scientists working with a variety of sophisticated tools created specifically to seek solutions to complex problems.

Progress in certain areas involving the inter-relationship between chemical structure and biological activity would be severely retarded without the innovative use of such powerful devices as X-ray diffractometers, nuclear magnetic resonance and electron spin resonance devices, ultracentrifuges, electron microscopes, mass spectrometers, high resolution chromatography and computers.

As a result we in medicine have stepped into a new world of numerous technological advances, electronic aids and computers. We have no option but to get used to these aids and learn to use them properly and to their best advantage in our treatment of our patients for unlike Alice in Wonderland we cannot step back into our old world.

The most obvious of our new aids is the computer which despite its versatility has no intuitiveness. Its basic component is an absolute mathematical precision and its only ability is to make 1 plus

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Address given to the New Haven Medical Association, April 19, 1972.

1 however expressed always equals 2. It is in fact an inflexible but incredible idiot who like humpty dumpty cannot make words to mean anything other than said and is useless without clear and accurate instructions. Many of us are not good at this but when we learn that the computer will produce very rapidly and in great quantity and at a relatively low cost accurate data for us about our patients, we will bless it.

Screening

As doctors we are becoming increasingly demanding for and often dependent on data for our patients. A feature of modern medicine is our increasing requirement for laboratory support and screening programs in the diagnosis and treatment of sick people. As a result laboratory work in most hospitals throughout the world are doubling every 5 years. A further demand in laboratory services is arising from the rapid evolution of screening programs as a component of preventive aspects of modern medicine.

The idea that early detection and prompt treatment may prevent progression of a disease and prevent more prolonged and expensive treatment at a later date thus resulting in a net saving in the use of physician and facilities is an intriguing one. However, there is no scientific evidence to refute or affirm this hypothesis. Having said this, I have no doubt that multi-analyses and screening systems once their optimal utilization and value are properly assessed and defined will have a very real part to play in the quality and economy of medical care in this technological age.

Surgery

Surgery's achievements in the last 50 years rests upon physiological advances, technical advances and revolutionary changes in surgical training. The residency concept goes way back to 1890 with Halstead at Hopkins, to Abraham Flexner who revolutionized medical training in 1910 by promoting development of full-time teachers and investigators and to Allan Whipple who introduced the resident concept in New York in 1921.

The physiological approach was employed by surgeons to study the problem of shock. Electrolyte and nutritional balance was studied in several institutions. I recall that when I was invited by Dr. Wm. Verdi to join the staff at St. Raphael's in 1934 I introduced to that institution the indwelling venous catheter to maintain electrolyte and water balance after surgery.

The most far reaching surgical technical advances have been in the field of cardiovascular surgery. Without extracorporeal circulation they could not operate directly on the heart. Operations such as ligation of patent ductus was in existence before 1950 but with the heart lung device all kinds of heart surgery became possible even heart transplantation and coronary artery bypass using autogenous vein grafts.

Let us as prototype in surgery consider one small specialty neurosurgery. What are their procedures dependent on—

(1) A knowledge of basic physiology, blood volume, electrolyte imbalance.

(2) A knowledge of causes of cerebral edema and its prevention by cortisone, pre-op and post-op and high osmotic preparations including diazoxide.

(3) The knowledge that came from heart-lung machine.

(4) Technology—cerebral angiography; catheterization; pneumoencephalography; electroencephalography; brain scan with radioactive isotopes; the Bove unit to prevent hemorrhage; the microscope first used by otologist Shea in the approach to ear problems makes possible better handling of basilar artery enrurysms; hypothermia, general and localized.

(5) Therapy, antibiotics in brain abscess, tuberculomas; ability to approach the pituitary through the nose; anticonvulsants—dilantin; ventricle atrial shunts in normal pressure hydrocephalus.

(6) Anesthesiology, endotracheal tube offering flexibility of position, monitoring heart, blood pressure and respiration.

Diseases of Medical Progress

We have not achieved the blessings of medicine without some cost to the patient and here I do not speak of the cost of illness but the cost of medical progress. The complications that result from the interaction of drugs, the complications that result from such procedures as liver biopsy, cerebral arteriography, from indwelling catheters and from countless other practices that have become the hallmark of scientific medicine. Everything has its price and the physician must always weigh the risk of doing a procedure against the possible risk of not doing it. This decision should always be made and the patient should be informed to avoid ethical and legal complications later.

Aside from drugs in infections, drug development has played a major role in every aspect of medicine. Of the 917 new drugs synthesized in the last 30 years many have revolutionized our treatment in every area, and especially in hypertension, cancer, mental and nervous illnesses. The census of our mental institutions is greatly reduced because of new mind altering drugs. Specific drugs such as lithium in manic depressive illness are but harbingers of things to come. Such drugs do not prolong life but they do relieve human suffering and anxiety.

However, with regard to digitalis the opposite is true. A young Bostonian Wag is credited with saying Lanatoside is replacing homicide as our number one "killer". It is indeed true that digitalis poisoning seems to account for more illness and death as each year passes. There is no doubt that an important cause of this increase is the free use of potent diuretics which wash potassium out of the system and make the myocardial cell more susceptible to the toxic effects. Another cause is the inexpert use of the new glycosides.

Plasma Membrane

Numerous biochemical events take place on or in the plasma membrane of a cell. It was once presumed to be a relatively static entity and its principal role was a simple delineation of cellular boundaries.

I would like to say a few words now about two technics that have helped to illuminate many fields in medicine. One is the electron microscope. This has helped to understand the cell membrane and the events that take place on or in this membrane. It was once presumed to be a relatively static entity and its principal role was a simple delineation of cellular boundaries.

A new concept is emerging of the membrane as a dynamic structure approximately 80 angstroms thick with a lipid core. Its surface may be a mosaic of patches of lipid areas of protein and carbohydrate sites where the surface end of a glycoprotein sits on the outer membrane. At points, protein and glycoprotein penetrate the lipid core.

A variety of technics including electron-spin resonance, X-ray diffractometer, immunofluorescence and photo dichroisom suggest that within the membrane things are fluid. Imagine a sea of lipids in which other molecules swim. There is great mobility of membrane components undergoing continuing reorganization.

There are different membranes with different functions—myelin sheath is atypical of most membranes, has 75% of lipids—other membranes have 50% lipid and 50% protein and can be the site of oxidative phosphorylation nucleic and synthesis (membranes inside cell).

A single example of the variability of membrane was the discovery in our lab that nerve cell membranes admit glucose for oxidation without the aid of insulin, whereas all other known membranes require insulin for glucose transfer into cells where it is oxidized.

Another interesting outcome of membrane studies are those concerned with keeping our lens transparent. It appears that the epithelial cell membrane on the outer cornea is highly active, its cells constantly excrete water from the lacunae of the collagen in the lens. Without the constant pumping out of water the lens would be translucent only, not transparent.

It is the cell membrane where important parts of the function of life is carried out from absorption, secretion, depolarization and repolarization, and many others.

Cell Culture

A technic of culturing cells in a petrie dish was first developed here at Yale by Ross T. Harrison, my teacher in Zoology. He grew nerve cells in a petrie dish containing plasma. This technic is playing an increasing role in basic biology. By this method (one can study) transformation of cells by introducing missing enzymes. The growth regulatory factors, growth inhibition and many phenomena dealing with cancer and also the aging process and finally the anatomy and physiology of cell surface function.

Medicine and Ethics

Extraordinary advances in biological and medical sciences in the last 50 years have raised serious ethical, social and legal problems. New techniques for obtaining cells from the fetus—amniocentesis—almost from the start of pregnancy and for determining many of the characteristics of that fetus from a study of the cells give a physician and a parent unequivocal answers to such questions as sex of the unborn child or its freedom from many genetically determined diseases. The potential availability of such knowledge raise interesting questions. One is should society countenance the birth of defective individuals when this could be avoided by timely intervention.

The extraordinary advances in genetics have illuminated to a remarkable degree the mechanisms through which biological information is transmitted from one generation to another. Parallel advances in virology have provided a method for replacing the genetic material of a cell with different information. An example is the cure of galactosemia. There the very real possibility of "genetic engineering" is on the horizon. What if any ethical limits are appropriate in this area. What attitude should we take on the question of cloning asexual replication of individuals in the form of genetically identical products.

How should we deal with the problems subsumed under the category of human experimentation. How should we deal with terminal patients, prisoners, normal volunteers in experimental medicine. Technical feasability of organ transplant has raised an almost unique set of moral, ethical and legal questions concerning the right of the donors, the right of the dying who might be saved by transplants at the opportune time and the use of organs from normal volunteers when lasting results cannot be guaranteed.

Modern medical technology has made possible unprecedented experiences that society has yet to integrate into its traditions these include (a) prolongation of dying without hope of recovery, (b) prolongation of life without any quality, (c) extension of life with an ever larger proportion of individuals reaching older ages—this has provided a serious challenge to the adequacy of the existing social structures, (d) the treatment of few patients at extremely high cost through new knowledge and technology such as intensive care, organ transplants, renal dialysis, (e) selective life saving by means of scarce artificial kidney machines, repeated blood transfusions. Such modern innovations make it necessary for individuals or groups to literally decide who shall live and who shall not live. Clearly we need responsible decision points within our society for addressing and treating the issues and implications associated with advanced biomedical research.

Societal and Personal Responsibility

We are not growing older any more. In 1948 the life expectancy was 70. In 1968 it is 70. What has happened to all the medical advances, innumerable journals, continuing education of the physicians, experimentation in education, why aren't we saving more lives. The truth is we are. All one has to do is see what happens to patients who enter and leave hospitals. Why then is the life expectancy unchanged over 2 decades? My view is that society and the individual are contributing a factor towards premature death equivalent to that which the doctor is contributing toward extending life.

As death from infections and infant mortality is declining deaths from accidents, alcholism, and drugs are on the rise. We have 9-10 million alcholics in this country. They die sooner, suffer accidents in which others as well as themselves are killed and maimed.

We have a million drug addicts and the number is increasing. They are young, create social turmoil, engage in criminal behavior and make life unsafe for us all in our major cities.

We have an overall accident rate of 44 million per year. Eleven million are disabling. There are 55,000 deaths from accidents on the road a year, and 2 million injuries. There are innumerable health hazards in industry that can be eliminated. What Nader's group calls the human scrap heap created by American industry.

We don't even begin to know the effects of air pollution on longevity. It is brought to our attention sharply when an air inversion raises the deaths from lung diseases into the thousands and the morbidity much higher from the automobile exhaust that hovers over us and poisons the air we breathe.

There are innumerable people who refuse to take personal responsibility for their own health. There are 56 million smokers in this country. They know it is harmful for their health. Death comes sooner and so does invalidism. How many have stopped? This is true for physicians as well. In England the smoking rate among physicians dropped from 51 to 31% in 20 years. As a result 80 physicians per year live who would otherwise die or the equivalent of one new medical school. If we apply similar reasoning to American physicians we would have the equivalent of 5 to 10 new medical schools if our physicians reduced their smoking to 31%. If they quit totally we would have the equivalent of 15 medical schools and medical personnel.

Then there is obesity. How many people who are obese are ready to take personal responsibility for their health. 30% develop Hypertension. 30% develop diabetes. What a relief to the burden of the physician if people took personal responsibility for their own health. There would be no "crisis" in medicine today and we would not need 50,000 physicians.

Then there is the problem of mental illness. Admittedly the psychology of the individual is just emerging. Mental illness of populations, mass psychopathy has not even been scratched even though in our life time genocide has been practiced in a methodical way on a grand scale in many parts of the world.

If one grants that diseases of society are the greatest threat to the future well-being of the human race—How can they be prevented? Such a task is not one for medicine alone. We need doctors of society trained in social, political and psychological disciplines who together with the physician, steeped in the scientific method will address themselves to societal illnesses. As in the history of medicine the first stage will be descriptive, then classification, then hypotheses, then experimental verification. Society today as a medical discipline is where medicine was in Hippocrates time—But it must make the start.

The Enduring Verities

All in all let us not forget the enduring verities—elementals of medicine—those aspects of medicine that are virtually timeless and unchanging. I refer to the nature of human encounter between patient and physician, an indispensable ingredient of the physicians task.

(1) To clinical observation, the skills a physician uses to elicit the information from and about the patient that is necessary for him to make judgments and decisions.

(2) To clinical reasoning, the mental operations whereby the physician translates the primary data obtained from clinical observations and diagnostic procedures into the conceptual framework of biochemistry, pathophysiology, morbid anatomy and psychopathology.

(3) The processes of clinical judgment and decision making whereby the program of care and treatment of the patient is evolved.

These are skills and functions requisite for all physicians regardless of their specialty. The central issue for us all is to learn what constitutes the essential modalities common to every physician's task.

The teaching of the elementals of the clinical approach to the patient as defined above was total 50 years ago. Today students and many physicians are disease oriented, not sensitive enough to the patient as a human being. He is excessively dependent on the laboratory as the basis for diagnostic decisions and clinical judgment.

We must strive to recover the enduring verities. We are going to have to do a good deal of rethinking about the job of the physician. Whatever changes take place two things are immutable. One is that the physician must be qualified to use the scientific method in his work with patients. The other is he must be effective and skillful in eliciting clinical data and applying his knowledge for the benefit of the individual who presents himself as a patient.

A far more sophisticated public than that of a generation ago, today regards the physician as a scientist, a logician whose tools and knowledge mean life.

In conclusion I have pondered over what qualities should we try to develop if we are to enjoy our own lives as doctors. First it seems to me is to cultivate the idea that we are always in an adventure searching for truth. If we can do this it can mean the difference between an exciting and a dull life. Second to do this effectively we must learn to appreciate the scientific method. It can be used to search for solutions of any problem including those of disease as well as those of society. Thirdly we must recognize that medicine is a vocation, not a trade. We must enter it with the idea that we are going to serve humanity and simply provide for ourselves a comfortable living. For otherwise we derive little satisfaction and gain little in our own self respect. Fourthly we must learn to enjoy working hard. Medicine makes never-ending calls on us. All we get in life that is worthwhile we get by the sweat of our brow. This requires self-discipline. Fifthly we must always look at ourselves critically. Have we overlooked anything, could we have done it better? What further knowledge must we have? In short we need continuously to engage in self-evaluation and self-criticism. Continual dialogue with our colleagues is very valuable in this regard.

These qualities are the eternal verities as true today as in Hippocrates time.

I have tried in my life to emulate the words of Sir William Osler given in his farewell address in New York 1905—

> "I have loved no darkness
> Sophisticated no truth
> Nursed no delusions
> Allowed no fear."

(This is the second of a series of two articles).

End of Part II.

FROM THE EXECUTIVE DIRECTOR'S OFFICE

160 St. Ronan Street, New Haven, Conn. 06511
Telephone 865-0587

William R. Richards, M.D.
Executive Director
Josephine P. Lindquist
Associate Executive Director

Leonard R. Tomat
Assistant Executive Director
Scientific Activities

SUMMARY OF ACTIONS
COUNCIL MEETING
Wednesday, June 28, 1972

I. ATTENDANCE

Present in addition to the Chairman, Dr. K. F. Brandon, and the Vice-Chairman, Dr. D. A. Grendon, were: Drs. Cramer, Root, Jr., Spitz, Nolan, Weber, Jr., Fabro, Bradley, Rem, Johnson, Ragland, Jr., Harwood, Pelz, Wilson, Dambeck, Roch, Nemoitin, VanSyckle, Friedberg, LaBella, Milles, Freedman and Hastings.

Also present were: Mrs. Lindquist, Mr. Sullivan, Mr. Olson (FCMA), Dr. Fleeson (UConn) and Dr. Richards.

Absent were: Drs. Backhus, Dean, Gardner, Hess, Canzonetti, Harkins, Krinsky and Klare.

II. ROUTINE BUSINESS

Approval of Minutes

As printed and distributed, it was VOTED to approve the minutes of the meeting of May 11, 1972.

Life Memberships

It was VOTED to approve applications for Life Membership received from the following eligible Active Members:

John J. Freeman, 18 Hillside Circle, Storrs (W)—1/1/72
Samuel T. Glasser, 4 Columbus Avenue, Niantic (NL)—1/1/72
Winfield O. Kelley, Uncas On Thomas, Norwich (NL)—1/1/72
Harold Lipton, Conn. State Health Dept., 79 Elm Street, Hartford (H)—1/1/73
D. Sergeant Pepper, 100 Scarborough Street, Hartford (H)—1/1/73
Howard P. Serrell, 249 Round Hill Road, Greenwich (F)—1/1/73
Robert N. Taylor, 159 State Street, New London (NLCMA)—1/1/72

Date of Next Meeting

The next meeting of the Council is scheduled to be held on Thursday, July 27, 1972.

III. OLD, NEW AND SPECIAL BUSINESS

Recognitions and Introductions

(a) By acclamation, it was VOTED to extend hearty congratulations to Norman H. Gardner, East Hampton, on his election as Vice-President of the American Medical Association for 1972-73. It was further VOTED to plan a dinner in honor of Dr. Gardner, as AMA Vice-President, to be held in conjunction with the 1972 semi-annual meeting of the House of Delegates and to invite Dr. Gardner to address the House in his capacity as an officer and member of the Board of Trustees of the AMA.

(b) Speaking on behalf of the Council, the Chairman welcomed back Kurt Pelz, as Councilor from NHCMA. Dr. Pelz was appointed by the Board of Governors of NHCMA to complete the unexpired term of James H. Root, Jr., Waterbury, resigned.

(c) The Council was apprised by the Executive Director that Mr. Raymond T. Sullivan, Jr., Assistant Director for Public Affairs, was leaving the Society's employ to join the Department of Field Service of the American Medical Association. Speaking for the Council, the Chairman thanked Mr. Sullivan for his past services to the Society and wished him well in his new post.

Request—CSMS Endorsement of "Cancer Epidemiology Program"

It was VOTED to adopt a motion "that the Council of the Connecticut State Medical Society endorse the proposal for a Connecticut Cancer Epidemiology Program submitted by Health Commissioner Franklin M. Foote and appoint two CSMS members to serve on the Program's planning committee". It was further VOTED to designate E.

Tremain Bradley, Norwalk, and Wayne P. Whitcomb, New Haven, as the two members to serve on said planning committee. An amendment to the foregoing motion which would have rescinded the Council's actions of 3/22/72 was lost, such actions consisting of approval of a quite different program for a "Connecticut Cancer Research Unit", proposed by an ad hoc committee of the CSMS Cancer Coordinating Committee, and authorization for the ad hoc committee to proceed with plans for the development of such "Unit", unilaterally if necessary.

It was further VOTED to advise Dr. Foote of the Council's continuing interest in having developed a broader program to attack cancer than that envisioned by the Cancer Epidemiology Program and to urge the planning committee to give due consideration to the possibility of broadening the Program forthwith or subsequent to its becoming operational.

Legal Opinion re "Contingency Fees"

It was VOTED to receive as information and for filing a legal opinion submitted by the law firm of Wiggin and Dana, New Haven, regarding the existence of "a method in Connecticut to establish a reasonable relationship between the services rendered by an attorney and the size of the legal retainer" in malpractice actions. In brief, it is the opinion of legal counsel that there does *not* exist such a method and that it is highly dubious that one could be established by law; i.e., by legislative action of the General Assembly. A copy of the opinion has already been transmitted to the chairman of the CSMS Committee on Professional Liability for the information of the Committee members.

Legal Opinion re CSMS-COMPAC Arrangements

It was VOTED to accept for filing a legal opinion submitted by the law firm of Wiggin and Dana, New Haven, on the question of the applicability of the 1971 Federal Election Law to certain working relationships between the Society and the Connecticut Medical Political Action Committee which had been given prior consideration by the Council (4/5/72). In brief, it is the opinion of legal counsel that the new Federal Election Law will permit the Society to enter into the proposed relationships with COMPAC provided that COMPAC limits its activities to participation in matters having to do with the election of candidates to *Federal* office and not involve itself with state or local elections, and provided that the proposed relationships stipulated in the request for legal opinion not be expanded or extended without further consultation with counsel.

Having been assured by Drs. J. H. Root, Jr. and George E. Roch, speaking as COMPAC Directors, that COMPAC has no present plans to participate in other than elections to Federal office, the Council VOTED to approve the CSMS-COMPAC arrangements proposed.

Report—Committee on Third Party Payments

Subject: Assignment of Third Party Payor Benefits: It was VOTED to accept for filing a report submitted by the Committee on this subject, and to approve the recommendation of the Committee that the Council obtain a legal opinion on the question of the rights of private third party payors, by statute and/or regulation, to deny assignment of benefits to physicians by patients in toto (as in the CMS Participating Physician arrangement which excludes non-Participating Physicians) or in certain circumstances (as in cases in which labor unions insist that the shop steward transmit benefits directly to the enrolled union member). Action on other recommendations contained in this report was deferred until the opinion of legal counsel has been obtained on the foregoing question.

Report—Committee on Public Health

It was VOTED to receive for filing a report of the Committee on its study of a document titled "Suggested Policies and Medical Directions for Community Nursing and Home Health Services", that has been drafted by the State Health Department, Public Health Nursing Division, of which the endorsement of the Society has been requested by the Director of the Division. It was further VOTED to approve the recommendation of the Committee that the Council grant the requested endorsement, including a word change made in a section title: "Physician's Statement of Eligibility for Employment as a Public Health Nurse", the original version of which was approved by the Society in 1949. The new title reads: "Physician's Statement of Eligibility for Employment as a *Community* Health Nurse".

Proposals—Liaison with CSMS Sections

Proposals were received for filing from the Board of Governors of NHCMA, via a Councilor, and from James H. Root, Jr., Waterbury, directly, that the Council establish liaison with the chairman of the Sections of the Society to discuss matters of mutual interest and concern. It was VOTED to adopt the motion submitted by Dr. Root as follows:

"IT IS MOVED: That the Council direct the President of the Society, in consultation with the Chairman of the Council, to call a meeting of the chairmen of all CSMS Sections (or designated representatives) to discuss problems of liaison and mutual interest. Members of the Council who wish to attend such meeting should be invited to do so."

CRMP

(a) It was VOTED to receive as information and for filing a resolution adopted recently by the House of Delegates of the California Medical Association which, in brief, reaffirmed CMA's support for implementation of the medical care purposes of the "Heart Disease, Cancer, Stroke and Related Diseases" legislation, and reaffirmed opposition to the use of RMP grant (tax) dollars to restructure existing health care delivery systems, the funding of direct health care services or the financing of HMO's.

(b) It was VOTED to receive for filing a communication from the Chairman of the CRMP Advisory Board, Mr. Russell G. D'Oench, Jr., which advised the Council that CRMP does recognize the office of the practicing physician as an important major point of entry of patients into medical care, but also believes that other entries (such as hospital ambulatory care services) are important to consider as alternatives and intends to support studies to investigate the value thereof.

Progress Report—"Connecticut Ambulatory Care Study"

It was VOTED to receive as information and for filing the completed document that was submitted to HEW on June 8, 1972 as the Society's request for a grant with which to conduct the proposed two-year ambulatory care study, approved by the House of Delegates on April 25, 1972. Drs. Weber and Grendon presented additional brief verbal reports on progress being made toward finalizing some of the details associated with "tooling up" to begin the study when the funds are received, including assessment of the qualifications and suitability of a candidate under consideration for the post of Project Director.

Report on CUPIS, Inc.

It was VOTED to receive as information and for filing a report submitted by O. Joseph Bizzozero, Jr., Waterbury, on the April 12 meeting of the CUPIS Board which he attended as a Director. In brief, the report indicated that CUPIS is having difficulty obtaining the funds needed to remain operational and is seeking solution of its fiscal problems. While several motions were under consideration regarding CUPIS and the Society's attitude toward same, it was found that there was no longer a quorum present and, hence, discussion was terminated and the meeting adjourned.

N.B.: *The foregoing is a summary of the proceedings and actions of the Council on June 28, 1972. Detailed minutes of the meeting are on file at 160 St. Ronan Street, New Haven, for perusal by an interested member of the Society.*

In Memoriam

Cameron, Eugenia, Johns Hopkins University, 1934. Dr. Cameron was an associate clinical professor at the Child Study Center of Yale University from 1953 to 1970. Dr. Cameron, who had also been a practicing psychiatrist in New Haven, had retired with her husband, Dr. Norman Cameron, to live in Tucson, Arizona. She and her husband were on their way to Europe for a summer holiday when she was fatally stricken. Dr Cameron died at sea on May 22, 1972, at the age of 68.

Scafarello, Peter Joseph, Tufts Medical School, 1926. Dr. Scafarello was a practicing physician in the Hartford area since 1927. Dr. Scafarello served on the staff at St. Francis Hospital since 1930 and was a member of the courtesy staff at Hartford Hospital and Mt. Sinai Hospital. He was a member of the Hartford County Medical Association and the Connecticut State Medical Society. Dr. Scafarello died June 18, 1972, at the age of 73.

Shermak, Joseph Vincent, University of Vienna, 1919. Dr. Shermak was a general practitioner in the Fairfield area since 1923. He was a life member of the Connecticut State Medical Society and the American Medical Association. Dr. Shermak died in Honolulu, Hawaii, where he had lived several years since his retirement, on April 24, 1972, at the age of 84.

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Placement Wanted

Allied Personnel

Assistant or Associate Hospital Administrator—Medium sized hospital. Available Sept. 1972. Masters of Business Administration from Univ. of Florida, University Hospital of Jacksonville. 27 years of age. Married. Wishes to locate in Connecticut or Massachusetts. David B. Driggs, 1220 LeBaron Avenue, Jacksonville, Florida 32207.

Physician's Assistant—25 years of age. Presently enrolled P.A. Program at Duke University. Desires smaller coastal community. Assisting solo practitioner or group practice. David E. Lee, 2104 Chapel Hill Road, Durham, North Carolina 27707.

Physician's Assistant—28 years old. Available September 1972. Graduate of Duke's P.A. Program. Wishes to work with surgeon. Interested in coastal area. William M. Signorini, 2112 Broad Street, Apartment D-18, Durham, North Carolina 27705.

Physician's Assistant—32 years old. To assist general or thoracic surgeon. Available Sept. 1972. Duke University graduate. John J. Gerstbrein, 923 West Markham Avenue, Durham, North Carolina 27701.

MEDIHC Program—Former military medics; number of candidates available. Contact: Henry J. Miller, Military Experience Directed into Health Careers, 640 Chapel Street, New Haven, Connecticut 06510. Phone: 865-0862.

General Medicine—Available November 1972. Prefers Emergency Room. Or family practice in rural locale. Robert W. Lisle, M.D., 4235-C FCN, McGuire AFB, New Jersey 08641. (609) 724-2100, ext. 2945.

General Medicine—Available 8/15/72 to 2/15/73. Currently with U.S.P.H.S. George J. Saari, M.D., Box 175, Neah Bay, Washington 98357.

Cardiology—Partnership, Associate, or group practice. Medium sized community. Teaching hospital affiliation if possible. (FLEX) Fellow in Cardiology at UCLA Medical Center. Shuja Ghaznavi, M.D., Apt. #3B, 540 South Euclid Ave., Pasadena, California 91106.

Cardiology—Board certified. Available now. Large community with associate or group type practice. 32 years old.

Dermatology—Board eligible. Prefers solo or group or associate practice in large or medium sized community. Available immediately. Bernard J. Cahn, M.D., Box 2955, Duke Hospital, Durham, North Carolina 27710.

Gastroenterology—Board eligible. Available November. Desires large community in group or associate practice. 32 years of age.

Internal Medicine: Hematology-Oncology—Board eligible. Available 1/73. 33 years old. Large or medium sized community. Group or associate practice. John S. Hunt, M.D., 11611 Chenault Street, Los Angeles, California 90049.

Internal Medicine—48 years old. Desires salaried position in large or medium sized community. Board eligible. Available in short notice.

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Internal Medicine: Rheumatology—30 years old. Board eligible. Group or institutional practice in large or medium sized community. Available in August. Stuart N. Novack, M.D., 17-51 215th Street, Bayside, New York 11360. (423-1110).

Internal Medicine: Cardiology—32 years old. Board certified. Available September. Group or institutional practice in large or medium sized community. Former teaching fellow at Harvard. John C. Santos, M.D., U.S. Army Hospital, Frankfurt, Germany. APO New York 09757.

Neurology—Available 9/72. Board eligible. 30 years of age. Passed National Boards.

Neurology (clinical)—British trained. Presently in practice. 41 years old. Available at a mutually convenient date. Solo, group or associate practice. Medium or small community. George J. Vakkur, M.D., 2375 Terwood Drive, Huntingdon Valley, Pennsylvania 19006.

OB/Gyn—Board eligible. Desires associate, group or solo practice. Conn. license. 42 years old. John E. Mullin, M.D., 200 North Long Beach Avenue, Freeport, New York 11520.

Ophthalmology—Board eligible. Available November 1972. Conn. license. Passed National Boards. Prefers coastal area, but a large or medium sized community in Connecticut will be considered. Solo, group or associate practice. Jean Pierre Huberman, M.D., Apt. #207, 5402 N. Nevada, Colorado Springs, Colorado 80907.

Orthopaedics—Board eligible. Available October 1972. 32 years old. Presently at Univ. of Cincinnati. Associate practice desired. Permanent visa with declaration of citizenship. S. Nayebi, M.D., 611 Lowell Ave., #23, Cincinnati, Ohio 45220.

Pathologist—Board certified. Conn. license. 33 years old. Group or associate practice desired.

Pathologist—Board certified. Available September 1972. Desires medium sized community with group or institutional practice. 33 years of age. Interested in shore location.

Pathologist—Board eligible. 40 years old. Group or associate or institutional practice. Howard S. Zucker, M.D., 302 Avenue N. Brooklyn, New York 11230.

Pathologist—Board eligible. 49 years of age, wishes to relocate in Connecticut. Thomas R. Argiro, M.D., 201 Dakota Street, Hot Springs, South Dakota 57747.

Pathologist—Board certified. Mid 50's. Interested in computerized and semi-automated laboratory. Available September 1972. E. Clifford Heinmiller, M.D., 1126 Washburn Place West, Saginaw, Michigan 48602.

Pathologist—Available late 1972. Presently Assistant Pathologist. 37 years of age. Abdul K. Yousuf, M.D., 252 Providence Ave., Riverside, Rhode Island 02915.

Pediatrics—Available 1/73. Board eligible. Currently Fellow in Ambulatory Pediatrics at University of Rochester. Conn. license.

Pediatrics—Board eligible. 36 years old. Available August 1972. Group or associate or institutional. V. Kavirajan, M.D., 97-30, 57th Ave., Apt. 2M, Lefrak City, New York 11368.

Pediatrics—Board eligible. Available October 1972. Group or associate or institutional practice in large city. 29 years old. Southern Connecticut area desired.

Pediatrics—Board eligible. Connecticut license. Presently in practice. Seeking partnership in Connecticut.

Psychiatry—Board eligible. Available September 1972. Group practice in medium or small community. 32 years old. In-

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terested in combining mental health appointment and private practice. Frederick Fried, M.D., 2601 E. 25 Street, Topeka, Kansas 66605.

Surgery—General and vascular. Available January 1973. Board qualified. Harvey G. Clermont, Lcdr. M.C., USN, Box 11, Nav. Sta. Adak, FPO Seattle, Washington 98791.

Surgery—General: Board certified. 35 years old. Available August 1972. Group or associate or solo practice. Alexander N. Gunn, II, M.D., 63 Roundwood Road, Newton, Massachusetts 02164.

Surgery—General, Board eligible. Available October 1972. 33 years old. Morris A. Kugler, M.D., 507 Cherokee, Highland Park, Illinois 60035.

Surgery—General, Board certified. 34 years old. Available September 1972. Group or associate or institutional. Brian S. Miscall, M.D., 4314 Bethel La. Road, Columbia, South Carolina 29206.

Surgery—General, thoracic and vascular. Board certified. Available August 1972. 33 years old. Group or associate. John M. Parsons, M.D., 215A 84th Street, Virginia Beach, Virginia 23451.

Surgery—General. 33 years old. Board eligible. Available December 1972. Associate type practice. U. S. Soriano, M.D., 11042-128 Street Ste. 307, Edmonton, Alberta, Canada.

Surgery—General—Board eligible. Interested in associate type practice. (FLEX). 35 years old. Jose A. Raquel, Jr., M.D., 160-10 89th Avenue, Apartment 5-E, Jamaica, New York 11432.

Surgery—Board eligible in thoracic surgery. 31 years old. Group or associate or institutional. Marshall W. Webster, Jr., M.D., 510 Rutgers Avenue, Swarthmore, Penn. 19081.

Urology—Board eligible. Available September 1972. Group or solo or associate practice in large or medium sized community. 33 years old. David O. Taber, Major, M.C., Chief, Urology Clinic, 130th General Hospital, APO 09696.

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Internist—Preferably Board Certified or eligible, for chronic disease and cancer hospital having sections for TB in adults and children. 35 hr. week, 11 paid holidays, sick leave, 3 weeks vacation after one year of service. Salary level: $23,227-28,333. Paid health insurance and minimum charge for life insurance. Apartment available for physician with small family. Write Medical Director, Uncas-on-Thames Hospital, Norwich, Connecticut 06360.

Neurologist—Litchfield County area. Search Committee of the Medical Staff will assist qualified candidate.

Neurosurgeon—Opportunity in southwestern shore community. Near N.Y.C.

Obstetrician-Gynecologist—Group practice is looking for a second ob/gyn. 12 man multispecialty group. Northwestern Connecticut. Conveniently located to New York State. Send resume to Manager, Sharon Clinic, Sharon, Conn.

Ob/Gyn—Associate needed for community near New Haven. Coastal Town. Small Community Hospital.

Ob/Gyn—Associate needed. Attractive community. Short distance from Waterbury.

Ob/Gyn—Associate needed for Waterbury group.

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Pediatrician—Send resume to Administrator, Day Kimball Hospital, Putnam, Connecticut. Search committee wishes to attract physicians.

Pediatrician—currently board-eligible or board certified. Full-time position. Salary negotiable. To practice family oriented medicine in a private, non-profit neighborhood health center. For further information please contact Evans H. Daniels, Jr., M.D., Medical Director, Community Health Services, Inc., 1023 Albany Avenue, Hartford, Connecticut, 06112. Telephone 549-1423.

Pediatrician—Needed to join physician in the Waterbury area.

Pediatrician—Community of Enfield needs pediatrician. Growing community north of Hartford.

Pediatrician—To join pediatrician in northeastern portion of the state.

Psychiatrists—Needed for state facility. Write Superintendent, Norwich Hospital, Norwich, Connecticut 06360.

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Home and Hospital for the Aged in search of internist or general practitioner interested in geriatric medicine. Responsible for staff physicals. Salary and possible housing.

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Meeting Notices

The information on this "notices" page is offered as a service of all specialty groups and allied health agencies in order to publicize postgraduate educational opportunities available to subscribers. The deadline for publication in Connecticut Medicine is the tenth of the month preceding, date of issue. Send copy to: Connecticut State Medical Society, 160 St. Ronan Street, New Haven, Connecticut 06511.

GENERAL

October 10-15—Tuesday-Sunday
Hypnosis in Medicine, Dentistry and Psychology
24th Annual Workshop and Scientific Meeting
Sheraton Plaza, Boston

October 18—Wednesday (9:30 A.M.-4:30 P.M.)
"Multidisciplinary Approach to Patient Care"
Sheraton-Park Plaza, New Haven

April 24, 25, 26, 1973
181st Annual Meeting of the Connecticut State Medical Society
Hartford

GASTROENTEROLOGY

September 10-16—Sunday-Saturday
Clinical Gastroenterology
Castle Harbor Hotel
Tucker's Town, Bermuda
Contact: Vernon M. Smith, M.D.
301 St. Paul Place
Baltimore, Maryland 21202

INTERNAL MEDICINE

September 5-9—Tuesday-Saturday
International Society of Internal Medicine
Twelfth Biennial Congress
Boston, Massachusetts

September 25-26—Monday-Friday
Basic Mechanisms in Internal Medicine
Medical College of Virginia
Richmond, Virginia

OBSTETRICS and GYNECOLOGY

October 23-27—Monday-Friday
12th Annual Postgraduate Course
Columbia University
College of Physicians and Surgeons
New York, New York 10032

OCCUPATIONAL HEALTH

September 11-12—Monday-Tuesday
32nd Annual AMA Congress on
Occupational Health
Drake Hotel—Chicago, Illinois

ONCOLOGY

September 6-8—Wednesday-Friday
10th Cancer Chemotherapy Conference
Park Motor Inn
Madison, Wisconsin

PEDIATRICS

November 15—Wednesday
Fourth Biennial Perinatal Seminar
Connecticut General Auditorium
Bloomfield

PULMONARY PHYSIOLOGY

October 22-25—Sunday-Wednesday
Clinical Pulmonary Physiology
Poughkeepsie, New York
Contact: New York Trudeau Society
Room 710, 105 East 22nd Street
New York, New York 10010

CHANGES OF ADDRESS

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Electrocardiogram of the Month:

Yale-New Haven Hospital
New Haven, Connecticut

Prepared by
HYMAN M. CHERNOFF, M.D.
Associate Professor of Clinical Medicine,
Yale School of Medicine
Director, Dept. of Electrocardiography
Memorial Unit, Yale-New Haven Hospital

The Ventricular Premature Beat, An Aid In Exposing Cardiac Pathology (Continued)

In the first of this series the compensatory pause following a VPC permitted the recognition of abnormal atrial rhythms obscured during a more rapid rate. In this the second article of the series, the compensatory pause following a VPC is shown also to expose increased automaticity of a subsidiary pacemaker center located in the ventricle and also demonstrate proper functioning of an implanted demand type artificial pacemaker.

In the normal state the sinus node acts as the cardiac pacemaker because its automaticity exceeds that of subsidiary automatic pacemakers located in the AV junction and in the ventricles. The normal rate of impulse formation in the ventricular pacemaker center is usually in the range of only 25 to 40 beats per minute. In certain clinical states, such as digitalis intoxication, hypoxia, or acute myocardial ischemia, the automaticity of this pacemaker may be enhanced. As long as the rate of impulse formation in the sinus node or in other supraventricular pacemakers continues to exceed the rate of the accelerated ventricular pacemaker, control of the ventricles cannot be usurped by the ventricular pacemaker and the presence of such acceleration is thus masked. The pause following a VPC may permit the ventricular pacemaker to generate its impulse and thus assume control of the ventricles for one or more successive beats. Fig. C obtained from a patient with digitalis poisoning demonstrates the unmasking of an accelerated ventricular pacemaker during the compensatory pause following a VPC. The first three and last three beats are of sinus origin at rate of approximately 96 per minute. The 4th beat is a VPC followed by a compensatory pause which is terminated by a beat arising in the ventricular pacemaker center. The next two beats also arise in this center (arrow heads point to these beats). This brief period of AV dissociation represents temporary usurpation of control of the ventricles by a ventricular pacemaker whose automaticity had been increased to a rate of 88 beats per minute (R-R intervals of 17 mm.). This toxic manifestation of digitalis subsided with omission of digitalis for several days. Without the compensatory pause following the VPC the existence of increased automaticity of the ventricular pacemaker would not be known.

Demand type artificial pacemakers are designed to elicit ventricular beats whenever there is failure of a supraventricular impulse to reach and excite the ventricles in a given period of time. As long as such impulses are conducted to the ventricles at a rate faster than the preset escape rate of the artificial demand pacemaker no artificially produced beats can occur and there is no way of knowing whether the artificial pacemaker will function properly when needed. However, if VPCs occur in such a patient, the compensatory pause following the VPC may be long enough to permit the demand pacemaker to generate an impulse and elicit a ventricular beat. Fig. D was obtained from a patient with recent myocardial infarction of the inferior wall in whom a demand mode artificial pacemaker was installed, pre-set to elicit beats whenever the heart rate dropped below 68 beats per minute (R-R intervals of 21.5 mm). The first three beats are of sinus origin as is the last beat at a rate of 78 per minute. Beat 4 is a VPC followed by a compensatory pause during which the demand pacemaker set at 68 beats per minute discharges (arrow head point to the artificially produced beats). This demonstrates the presence of proper functioning of the demand mode pacemaker.

(To be continued)

Fig. C

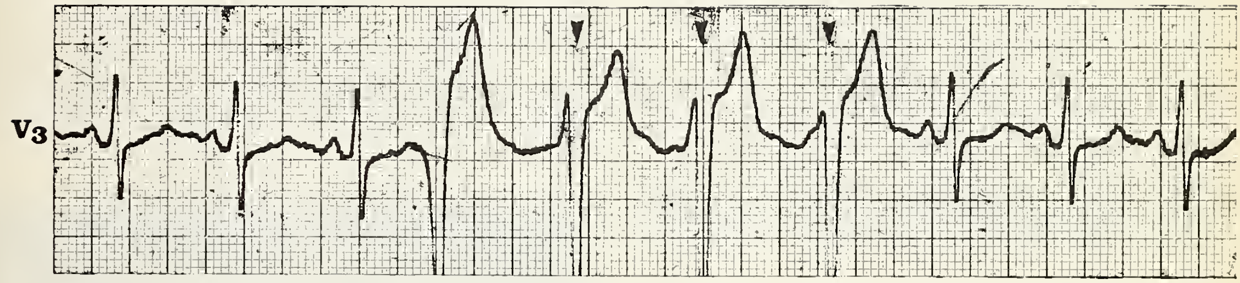
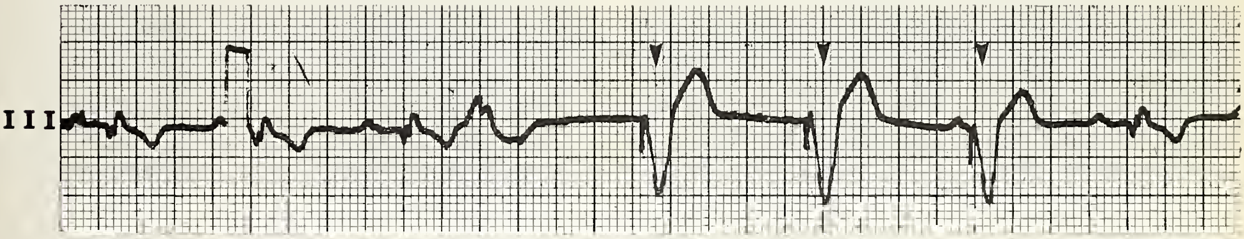


Fig. D



X-Ray of the Month

Section of Chest Diseases

Yale-New Haven Medical Center

Arnold B. Rilance, M.D., Director, Winchester Chest Clinics

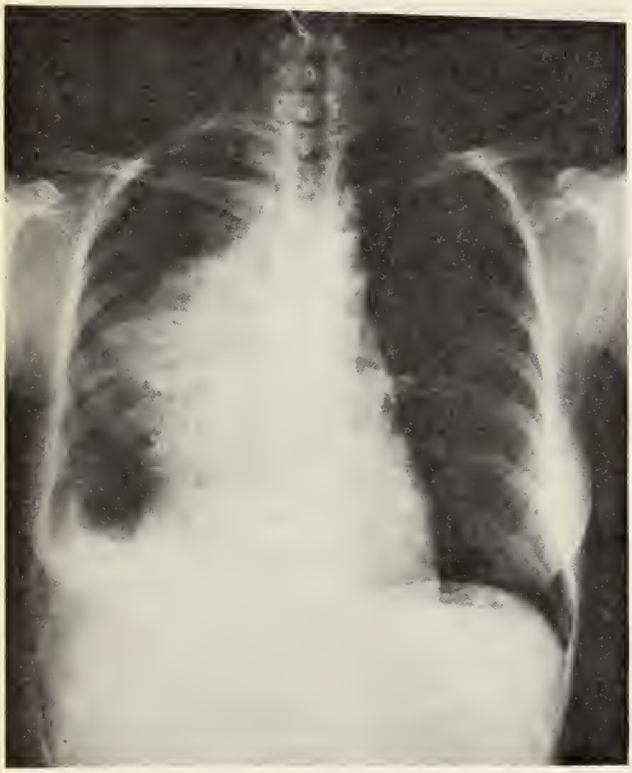
and Bernard Kramer, M.D., Attending Physician, Winchester Chest Clinics

J.M., a 32 year old female, noticed the development of weakness in July, 1971 and was admitted to the Memorial Hospital, Meriden, Connecticut in November, 1971 for evaluation. A generalized pruritis had been present for several years. A cough and associated night sweats had been present for several months. She had been a cigarette smoker since the age of 18 years.

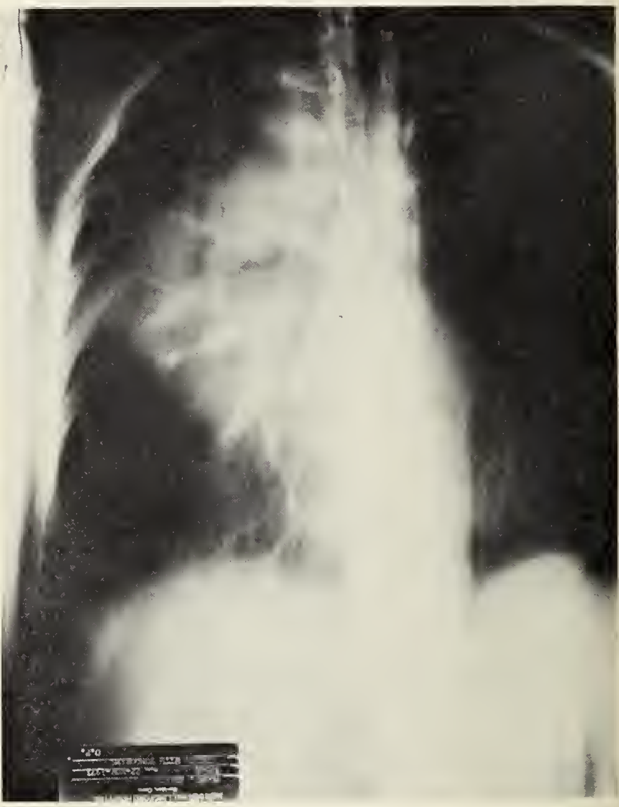
An X-ray of her chest revealed a large right-sided perihilar mass and a tentative diagnosis of primary carcinoma of the lung was made.

On physical examination, generalized excoriations on the skin surface were noted. She had a palpable mass above the right clavicle with a few shotty glands palpable in the left supraclavicular fossa. The liver and spleen were not palpable. The patient demonstrated a slight anemia. A bone marrow needle biopsy was reported as normal.

The right supraclavicular lymph nodes were biopsied. This revealed a sclerosing process involving lymph glands which failed to show evidence of a specific etiology. An anterior paramediastinal biopsy was then performed which demonstrated Hodgkin's disease with typical Reed-Sternberg cells seen on microscopic section.



The right heart border is obscured by infiltration in the right middle lobe. There is a small effusion obscuring the right costophrenic sulcus. There is a large mass lesion projecting from the mediastinum into the middle 1/3 of the right lung.



Laminagrams of the right lung show large peribronchial and paramediastinal nodes without an intrabronchial tumor mass being demonstrated. There is extensive compression of many bronchi beyond the level of the lobar division suggesting extrinsic compression of the bronchi. In addition, an infiltrating process involving the middle third of the right lung can be seen.

The patient was treated with radiation to the cervical, mediastinal and axillary areas as well as the right lung.

Discussion:

The patient presents with a large paramediastinal mass which superficially simulates a primary mediastinal or lung tumor.

The lateral view of the chest demonstrates that the mass is involving the mediastinum but in addition is causing contraction and consolidation of the right upper lobe. There is evidence of encroachment on the esophagus. These findings are compatible with a primary carcinoma producing partial atalectasis of the right upper lobe.

Laminagrams of the right lung, however, demonstrate an unusual picture of carcinoma. A large mass of discrete nodes can be seen surrounding the right upper and intermediate bronchi without evidence of an intrinsic tumor mass. A large group of glands adjacent to the trachea is visualized. Attenuation of the lumen of all the bronchi branching off from these major bronchi can be seen. These findings are most suggestive of a primary disease of the lymph nodes such as Hodgkin's disease or another type of lymphoma.

The development of primary lung carcinoma at age 32 is extremely unusual. At this age other malignant lesions such as lymphoma or malignancy arising in the mediastinum, such as the thymus gland, should be given prior consideration.

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Report of the National Convention

A special tribute to the Woman's Auxiliary at the opening session of the AMA's House of Delegates highlighted the 50th anniversary convention held June 18-22 at the St. Francis Hotel in San Francisco.

The program featured an audiovisual, multimedia presentation preceded by a musical tribute to the MDs to the tune of "Mame" and a 1920's style show by eight Auxiliary models. Between songs, the film sketched the highlights of 50 years of achievements including:

- the founding meeting in St. Louis in 1922 when Mrs. Samuel Clark Red, wife of a Houston physician, persuaded some startled MDs' wives and a recalcitrant AMA House of Delegates that a woman's auxiliary was needed.
- the first annual meeting the following summer in San Francisco. Pressed to explain the Auxiliary to some "grouchy old physicians" who still weren't convinced, Mrs. Red said, "It means—well—quite simply—it means love."
- the growing involvement of the Auxiliary in politics and legislation.
- Auxiliary leadership during World War II in recruiting nurses for the U.S. Cadet Nurses Corps and the service of thousands of Auxiliary members in many other ways during the war years.
- Auxiliary leadership in sponsoring Health and Careers Clubs, and the raising of more than six million dollars since then for nursing and allied health career scholarships and loans.

During the opening meeting, Wesley W. Hall, M.D., presented a citation to Mrs. G. Prentiss Lee, and C. A. Hoffman, M.D., presented 50 roses to Mrs. Robert Beckley. In addition, Mrs. Lee presented a check for $740,388. to John M. Chenault, M.D., president of the American Medical Association Education and Research Foundation (AMA-ERF). This marked the Auxiliary's largest single contribution. Since 1951, the Auxiliary has raised $5,487,399. for AMA-ERF which provides unrestricted grants to medical schools and enables medical students, interns and residents to obtain loans.

"Use a little pillowy talk to remind your husbands that they have a huge responsibility every time they prescribe a psycho-active drug," Art Linkletter told the more than 600 physicians' wives and guests attending the Monday luncheon.

"Let's face it. We're a pill popping society and every segment is contributing to it," he said.

Linkletter urged the physicians' wives to campaign for realistic drug education in the schools, starting in kindergarten and to launch a drive to have hospitals make room for addicts, and treat them like sick people, not criminals.

Mr. Linkletter was very critical of the drug education films. "Some of the worst films about drugs have been made by some of the nicest, most well-meaning people," he said. "Either they exaggerate and the kids know they're not telling it like it is, or they use scare tactics the kids laugh at."

Victor Weingarten, director of the President's Committee on Health Education, told those in attendance at the Tuesday morning session that they could be a formidable force. "You can get your Auxiliaries working on health education programs," he said. "You have enough muscle to change legislation, too."

That same morning Dr. Edward Stainbrook, (M.D. and Ph.D.) head of the Human Behavior Department of U.S.C. School of Medicine, told the group to stop suppressing dissent and start getting into a frame of mind to let youth express itself constructively.

Mrs. Robert F. Beckley of Lock Haven, Pennsylvania, was installed as president of the Auxiliary on Wednesday morning. In her inaugural remarks, Mrs. Beckley urged the Auxiliary to "press for improvements that will overcome criticism of the profession and help improve the quality of life for all."

She asked each member to study the local needs and develop plans for meeting them. "Give more volunteer hours, seek co-operation of other agencies in the community, vigorously recruit more members for training in our programs, and promote good health education," she added.

Mrs. Willard C. Scrivner of East St. Louis, Illinois, was elected president-elect, and Mrs. Howard Liljestrand of Honolulu, Hawaii, was named first vice president. Mrs. Norman Gardner of East Hampton, Conn. was named Eastern Regional Vice President.

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An Open Letter To Physicians Of Connecticut

EDITOR'S NOTE: *The House of Delegates of the Connecticut State Medical Society endorsed the plan of the American Red Cross to construct a new facility on the campus of the University of Connecticut Health Center at Farmington, and urged all physicians and all other citizens to participate generously in the $2.8 million building fund solicitation now under way in Connecticut.*

Dear Doctor:

The patients for whom you care often need blood and blood products. For twenty-two years in the State of Connecticut the Red Cross Blood Program has supplied those needs. Now, at a time when blood and its components are more necessary to modern therapy than ever before, the Red Cross Blood Program needs your support.

For the first time in its history the Red Cross in Connecticut is building a modern blood center. This new facility will allow for more sophisticated processing of blood platelets and other components, better screening for hepatitis, antibodies and rare bloods. Further steps will be taken toward providing prolonged red cell storage and a better product through the expanded blood freezing program. It is expected that within a short time, much of what is now given as raw blood, will need to be processed and further refined to remove some of the risks associated with present day transfusion practice.

To construct the facility will cost $2,800,000. This low cost for the type of building needed, is made possible because the land is being provided at the University of Connecticut Health Center through a 50 year lease from the State of Connecticut. Most of the funding is being solicited from Corporations and from wealthy individuals, not from the general public, so that the campaigns of the United Funds and other agencies should not be affected.

The close relationship of the Medical community to the Red Cross Blood Program in the eyes of the communities we serve, places you in a natural leadership role. Your support of the Program in both words and money is of vital importance to the success of this fund campaign.

The Red Cross Blood Program needs you—*first,* to encourage your colleagues and others to participate in funding this new facility, and *second,* to consider a commitment of $100 per year for a 3 year period or a total gift of $300. Your help in accomplishing this worthwhile goal will provide better medical care to your patients in the State of Connecticut.

John E. Thayer, M.D.
Chairman, CSMS Committee on
Organ and Tissue Transfers
Edward E. Morse, M.D.
Medical Director, Connecticut
Red Cross Blood Program

The Connecticut Red Cross Building Fund Campaign is deserving of a special financial commitment from physicians, over and above the usual considerations. This position is supported by multi-faceted evidence, some of which follows:

1. The State Medical Society, on April 25, 1972, passed the following resolution:

   RESOLVED: That the House of Delegates of CSMS endorse the plan of the American Red Cross to construct a new facility on the campus of the University of Connecticut Health Center at Farmington, and to urge all physicians and all other citizens to participate generously in the $2.8 million building fund solicitation now under way in Connecticut.

2. The Blood Program and other Red Cross services are life-saving programs of tremendous im-

portance to every member of the medical profession and the patients they serve.

3. The area covered by the project is Statewide.
4. The Blood Program is unique to Connecticut. It is a national example and receives widespread attention for its 100 per cent voluntary blood donorship for all the needs of the citizens of the State, and also for its advanced medical and technical procedures and its efficiency. When a service or facility obtains such a distinction nationally, it becomes a special feature of the community and is thereby deserving of special financial support beyond the "usual".
5. Increases in sophistication of component therapy and advances in special techniques such as the freezing of red cells require the new laboratory facilities.
6. The $2,800,000 needed is a "bare-bones" campaign goal. Unlike many campaigns, there is no built-in cushion for missing goal. If anything, the goal is an understatement—the land was obtained at no cost from the State but requires considerable improvement; the furniture and equipment is to be purchased from the uncertain sale price realized from the present building; inflation in construction prices has been held to an absolute minimum in estimating building costs. Thus, anything less than extra giving can easily bring about a deficit result.
7. In the 75 year history of providing services to the State of Connecticut, the Red Cross is making its first general appeal for a major building fund. Certainly this record in itself is deserving of a "once in a century" giving of extra proportions.

Summing up, special and extra-ordinary benefits accrue to each physician and to his patients and their families as a consequence of the planned facility. The unquestioned priority and need for it, combined with corporate and personal benefits are deserving of an "above the ordinary" level of gift.

PLEASE PRINT NAME & ADDRESS

Recognizing our area's need and opportunity for new and expanded facilities to house activities of the American National Red Cross, I/We intend to contribute to the RED CROSS BUILDING FUND PROGRAM:

the total sum of $____________, Cash herewith $____________ and balance in equal

☐ Annual; ☐ Semi-annual; or ☐ Quarterly; installments beginning ____________

or as follows: ________________________

____________ 1972 ____________

Subscriber's Signature

Please make checks payable to the Red Cross Building Fund Program and send to 100 Farmington Ave., Hartford, Conn. 06105

PROGRAM SECTION MEDICAL	TOTAL AMOUNT SUBSCRIBED	AMOUNT PAID	BALANCE
	$	$	$

(This subscription does not constitute a legal obligation)

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The first page should list title, the author (or authors), degrees, hospital positions and any institutional or other credits. References should conform to the usual style of the Journal. The following minimum data should be typed double spaced: names and initials of all authors, complete title of the article cited, name of journal, volume number, first and last page numbers, and year of publication. All references must be cited in the text. They should be arranged according to the order of citation, and not alphabetically. All references must be numbered consecutively. The number should be limited to the absolute minimum. Personal communications and unpublished data should not be included.

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Ordinary articles should not exceed 3,000 words (approximately 3 printed pages). Under exceptional circumstances only will articles of more than 4,000 words be published.

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Material other than original articles should be received not later than the 10th of the month PRECEDING date of issue.

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The Editor welcomes and will consider for publication letters containing information of interest to Connecticut physicians, or presenting constructive comment. Letters intended for publication should be marked "for publication." We shall be glad to know the name of the sender in every instance.

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Reprint orders should be returned at once as the type will be destroyed immediately following publication of the manuscript. The Journal does not stock reprints of the articles published. Requests for individual reprints should be sent to the author.

Communications should be addressed to Louis H. Nahum, M.D., Editor, Connecticut Medicine, 160 St. Ronan Street, New Haven, Conn. 06511. Telephone (203) 865-0587.

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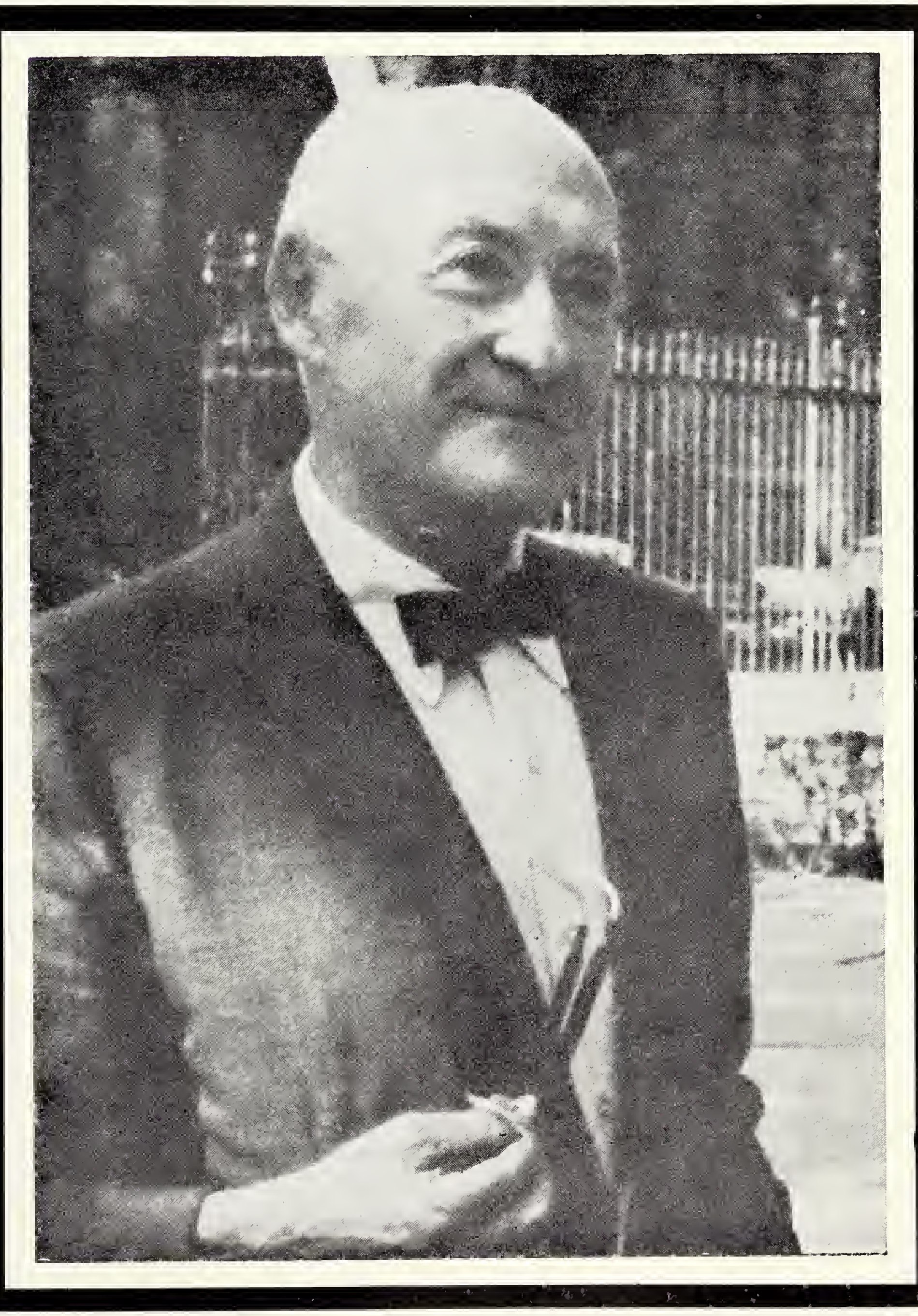
IN MEMORIAM



LOUIS H. NAHUM, M.D.
1892-1972
EDITOR

In Memoriam

Louis H. Nahum, M.D., New Haven

1892-1972

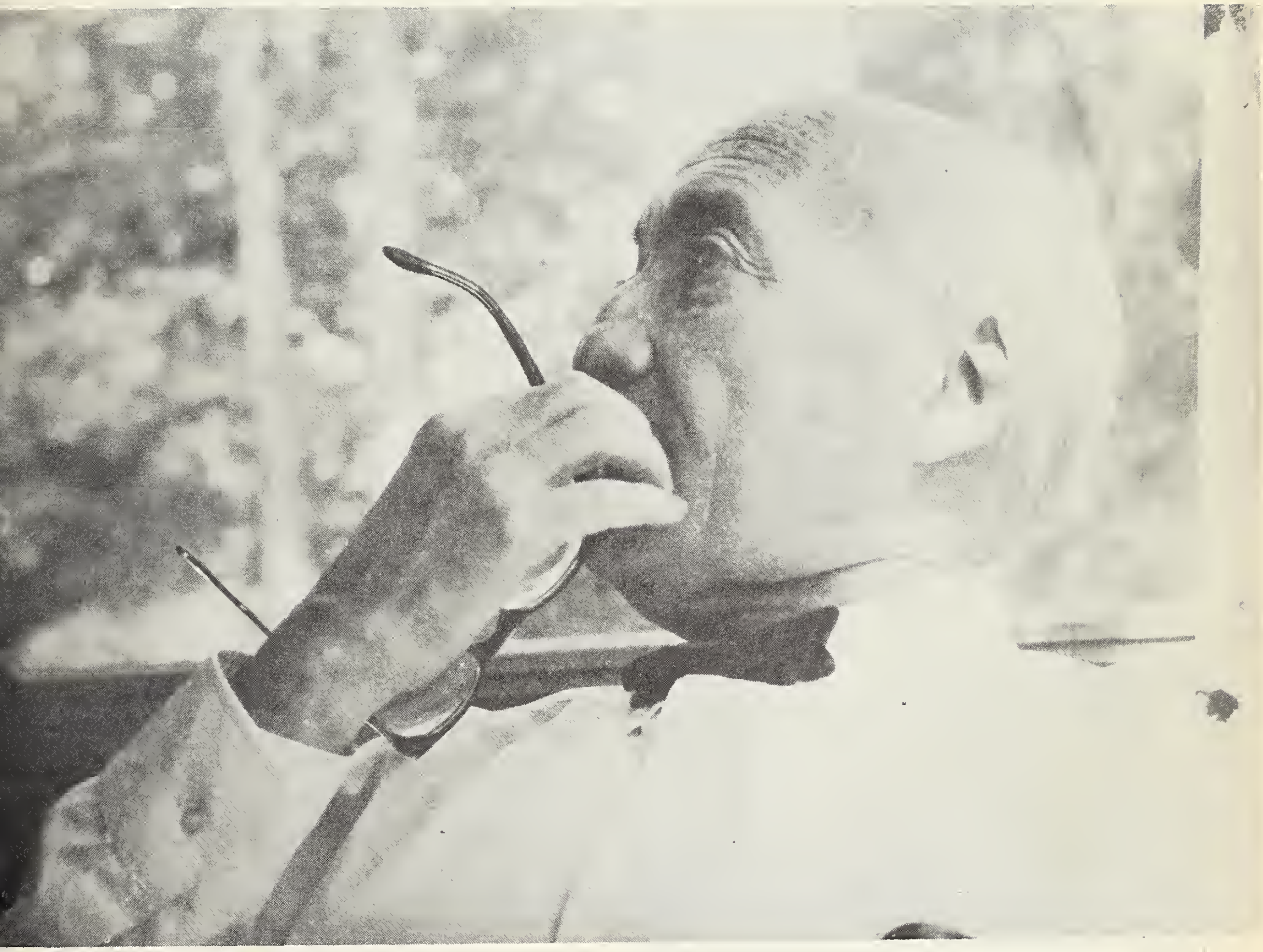
WHEREAS: Louis H. Nahum, New Haven, has been a distinguished practitioner of Medicine in Connecticut since 1916 and a member of the Connecticut State Medical Society for more than fifty years; and

WHEREAS: As Literary Editor (1958-62) and Editor (1962-72) of *Connecticut Medicine,* Dr. Nahum served with great dedication and distinction to gain nationwide acclaim for the publication as a medical journal of high quality and scientific excellence; and

WHEREAS: His notable contributions to patient care and the dissemination of medical knowledge have brought great credit to his profession and to the Connecticut State Medical Society; therefore be it

RESOLVED: That the Council of the Connecticut State Medical Society note with a deep sense of loss the passing of a distinguished colleague and valued friend, Louis H. Nahum, New Haven, and convey heartfelt sympathy to his widow and the members of his family; and be it further

RESOLVED: That the Council direct that a memorializing plaque bearing this resolution be struck in his honor and displayed in the office of *Connecticut Medicine* where he spent so many productive hours during the past twelve years as the Journal's Literary Editor and Editor, and that a duplicate of the plaque be presented to his widow.



Obituary

Louis H. Nahum, M.D.

1892-1972

With the death of Louis H. Nahum on July 25, 1972, we have all lost a physician who will be forever mourned by his close and devoted family, his associates in the practice of medicine, his many friends in basic and clinical medical research and by all physicians for whom he sought to bring the spark of a new fact or new approach to a problem.

Born in Lithuania, his family moved to Hartford when Dr. Nahum was three years old. He had a distinguished academic career, graduating from Yale College in 1912 and the Yale School of Medicine in 1916. Among his prizes at the medical school were the Ramsay Prize "given to the man with unquestioned ability and character" and the Keese Prize "awarded annually to the student who presents the best thesis." He became a house officer at the Mount Sinai Hospital in New York City, and after finishing his clinical training, Dr. Nahum had graduate training in cardiology at the Rockefeller Institute with the great Alfred Kohn.

After service in the U.S. Army Medical Corps, where he headed a base hospital at Fort Sill, Oklahoma, Dr. Nahum returned to New Haven to practice and hopefully start a cardiac clinic at the Yale Medical School. His hopes were quickly dashed when the then Dean Milton Winternitz glowered and said—"Young man, there is no heart specialty—come off your high horse—there is medicine!"[1] This was not to be the only time that Dr. Nahum demonstrated his remarkable vision of what was to come.

Oklahoma City Jan 16, 1918

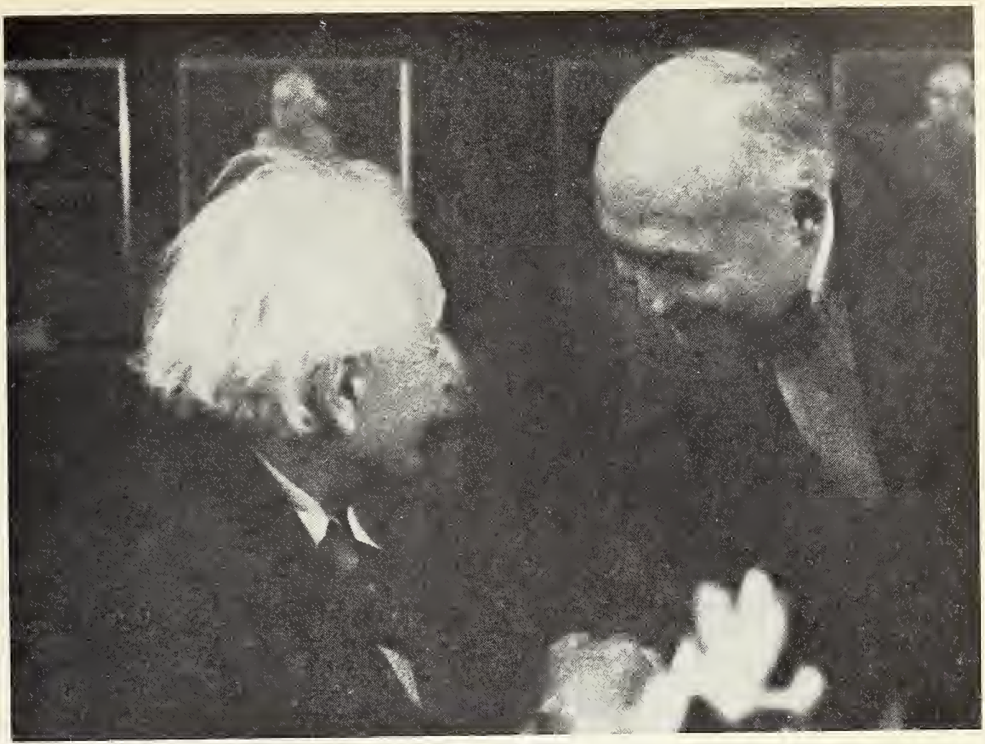
Dr. Nahum at extreme right at Fort Sill, Oklahoma, January 16, 1918.

Not disillusioned by Winternitz's rejection, Dr. Nahum chose to work in the Physiology Department and asked the then Professor of Physiology, Harold Himwich, to work part-time in his department. "He looked at me," said Dr. Nahum, "as did Winternitz, and said—'You are in practice? It won't do, you can't serve two masters at one time!'" This time, Nahum was prepared and told Himwich, "You are making an assumption, and from this you are drawing a conclusion without verification." Dr. Nahum's point made, Himwich relented and Dr. Nahum began in the physiology lab, where his day began at 7:00 a.m. to have enough time to spend a good part of it doing research and making night calls on his patients and doing blood determinations in the course of the day as his increasing practice demands allowed.

These were busy and fruitful days for Dr. Nahum. A number of papers crowned their researches. Their paper on the glucose lactate-pyruvate cycle was published four months after the Coris' paper which won for the Coris the Nobel Prize. A number of studies followed which explored new areas in liver and cardiac metabolism.

After Himwich left for another position, Dr. Nahum had his own laboratory and pioneered studies of the role of the autonomic nervous system in the production and genesis of various types of cardiac arrhythmias. He began his special lectures in clinical physiology for the medical students.

Dr. Nahum became a Diplomate of the American Board of Internal Medicine in 1937 shortly after it was founded, and a Diplomate of the sub-specialty Board of Cardiovascular Disease in 1941, one of very few in the United States.



Dr. Albert Einstein's home, Princeton, New Jersey.

He assumed greater and greater responsibilities but continued his active physiological research. He introduced at the Hospital of St. Raphael the indwelling venous catheter to maintain electrolyte and water balance after surgery.

He became a Fellow of the American College of Physicians, and of the Council in Clinical Cardiology of the American Heart Association. Dr. Nahum was an Associate Fellow of Berkeley College, Yale University. His clinical acumen was recognized throughout the New Haven area and he became a Consultant in Medicine at the Hospital of St. Raphael, the Yale-New Haven Medical Center, the Griffin Hospital, the Middlesex Hospital, and the Milford Hospital.

Long interested in medical education, after World War II he became one of a group of founders who created a new medical school in the Bronx, and Dr. Nahum was instrumental in convincing Dr. Albert Einstein to allow his name which he suggested as the name best suited for the school, to be used by the new school.

He became lecturer emeritus in physiology, and, with this slight decrease in his academic responsibilities, he was quickly appointed Literary Editor of *Connecticut Medicine* in 1958. Three years later he became Editor, and as Dr. William Richards, Executive Director of the Connecticut State Medical Society observed, "He made the Journal almost his second career."

Dr. Nahum became the fourth Editor of *Connecticut Medicine* in 1962 and explored the role of the state medical journal. He sought to inform his readership of recent developments in medical science, he presented material of general and special interest and developed the special issues edited by an expert on a single subject that have contributed to the development of the Journal. His editorials drew enthusiastic response and acclaim. In 1966, the Editor of *Massachusetts Physician* summarized the sentiment of everyone who looked forward to the ten or twelve published each month when he wrote, "I must again express my amazement at the contributions made monthly by Louis Nahum. All of them deserve widespread dissemination. How one man can write on such a wide range of subjects is a source of wonder. Each carefully presented editorial makes me look forward to receiving every single issue of *Connecticut Medicine*." His editorials covered the wide range of philosophy, art, socio-economics, and the science of medicine.

In addition to membership in his local, county, state and national medical societies, Dr. Nahum belonged to the American Physiological Society, was a pioneer member of the Connecticut and American Heart Associations and a member of Sigma Xi, the scientific honor society.

Many fortunate individuals basked in the warmth of his personality and were attracted by his old-world courtliness. He was never too busy to counsel younger colleagues in their careers.

In spite of his very full schedule, Dr. Nahum was happiest in the circle of his beloved family, his wife, Stella, and his two children, Dr. Jeremy Nahum, a psychiatrist of Newton, Massachusetts and his daughter, Harriet (Mrs. Emanuel Rice) of New York.

Although convalescing from a recent myocardial infarction, Dr. Nahum was busily involved in planning for future issues of our Journal and on July 25, 1972, he died quietly in his sleep. From the conclusion of his recent Memorial Lecture to the New Haven Medical Association, "Fifty Years of Medicine", which was also published in the July and August issues of our Journal, there is a fitting summary of the philosophy of this great physician, scientist, teacher and man:

> "I have loved no darkness
> Sophisticated no truth
> Nursed no delusions
> Allowed no fear."
>
> (Sir William Osler,
> Farewell New York address, 1905.)

An as a fitting epitaph for him there come to mind the words of Mark Antony:

> "His life was gentle, and the elements
> So mixed in him that Nature might stand up
> And say to all the world, 'This was a man.' "

Oscar Roth, M.D.
Wm. F. Eckhardt, M.D.

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Dr. and Mrs. Nahum, Jeremy and Harriet celebrating an anniversary.

Natchie And I, New Haven 1928

In the fall of 1928 a young physician with a rather serious face and soft well-modulated voice visited me at the Physiology Laboratory of the Yale Medical School and asked whether he could join my group in order to be indoctrinated into the methodology of research. Of course, I was glad to have another co-worker. At that time some work was being done in the laboratory indicating that in the living dog the liver takes up lactic acid from the blood and sends out sugar in exchange (Himwich et al., 1928). At the end of each one of these experiments the dog was taken to another laboratory and Natchie (that was his nickname) trephined a hole in the dog's cranium, over his transverse sinus, and with the help of a fellow-worker drew blood samples simultaneously from the superior longitudinal sinus and a femoral artery. His results yielded a respiratory quotient that was usually about unity. This was not what I had been brought up to expect. The respiratory quotient, the volume of carbon dioxide eliminated from the lung divided by the volume of the oxygen consumed, usually varied from 0.7 to 1.0. For example, an eskimo on a high fat diet would have an R.Q. slightly above 0.7 and a boy who had just stuffed himself with sweets might have an R.Q. approaching 1.0.

I, as a graduate of Cornell University Medical School, had been told by a great leader of one branch of the field of metabolism, namely, Professor Graham Lusk, that foodstuffs were used according to their availability, and the respiratory quotient of the body would vary according to the food intake. There was no apparent reason why the brain should not reveal the same differences in R.Q. as does the entire body. It is of interest that Natchie, despite his short time in the laboratory, got good checks for his analyses of the blood gases on the Van Slyke apparatus and his results were accepted immediately. With such an unexpected result, I decided to take a hand in the matter and to my surprise again obtained respiratory quotients that were close to unity. These dogs had been under nembutal anesthesia at the time the observations were made.

In an attempt to improve conditions, we made two changes in our experimental procedure. There was the possibility that the anesthetic was interfering, so we changed our technique and performed the operation under anesthesia but waited until the next day when the animal had recovered from the anesthesia before drawing blood samples. In addition, we decided to ascertain the respiratory quotient of the whole animal. We studied our dogs after they had been fasted for two days and the respiratory quotient of the entire animal was appropriate for the metabolic condition, 0.75, but that of the brain continued to be unorthodox.

Natchie and I continued our discussions and concluded that we would force the respiratory quotient down as far as we could by placing the animals on a high fat mixture. We phlorhizinized dogs, we depancreatized them, and finally we went to the extreme of phlorhizinizing and depancreatizing them. The respiratory quotient of the entire animal varied between 0.67 and 0.69, while the respiratory quotient of the brain really did not budge. That organ, with its origins in ectodermal tissues, seemed to have its own rules of metabolism (Himwich and Nahum, 1929; 1932). There is an aftermath to this story which carries its own lesson with it.

In the last decade various workers have found special conditions in which the brain does oxidize fat in the form of ketone bodies. Cahill's group (Owen et al., 1967) found that the brains of extremely obese patients, ingesting only water by mouth, oxidized fat in the form of ketone substances. Page et al. (1971), in Krebs' laboratory in Oxford, as well as Itoh and Quastel (1970), demonstrated that the brain of newborn rats oxidized ketone bodies and in preference to glucose.

Cahill's group (Owen et al., 1967) have shown that, even in the absence of ingested carbohydrates, carbohydrates are formed in the human body, some from nitrogenous substances and some from the glycerol part of fat. They calculated that about 33 grams of glucose were formed in the body per day. One suggestion as to what these 33 grams may be used for comes from the work of Abood and Geiger (1955), (Breakdown of proteins and lipids during glucose-free perfusion of the cat's brain). Under their experimental conditions, these authors conclude that glucose is the only foodstuff that can supply the energy required for the maintenance of the structure of the brain.

I left New Haven for a post at Albany Medical College, and Natchie, naturally, went into research in cardiology for that was his field. I am sure that many other people are grateful for what Natchie has done for them because he was an excellent physician.

Natchie, as well as being a stimulating and productive colleague, was a wonderful family man. For many years, he helped his young wife with her career in piano, indeed in all things musical. Later in life he became more and more interested in the mechanisms which make human beings tick, and perhaps that is why his son became a psychiatrist and his daughter is married to one.

Personally, I will never forget the months that Natchie and I worked together. I cannot but feel that it was one of the richest interpersonal relationships that I have had during my entire life—to work together closely during a rich creative period, when you test your ideas day by day in one experiment or another, and then new conclusions are drawn, only to be tested in turn.

This I owe to Natchie, that we have had this wonderful relationship which enriched our respective personality structures—those few exalted minutes, highly spiritual in character. One of the greatest joys of life is to enjoy the attributes of the mind. He and I together have had an emotional experience in common for which I shall be ever grateful.

Harold E. Himwich, M.D.

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Louis Nahum, Lifelong Scholar

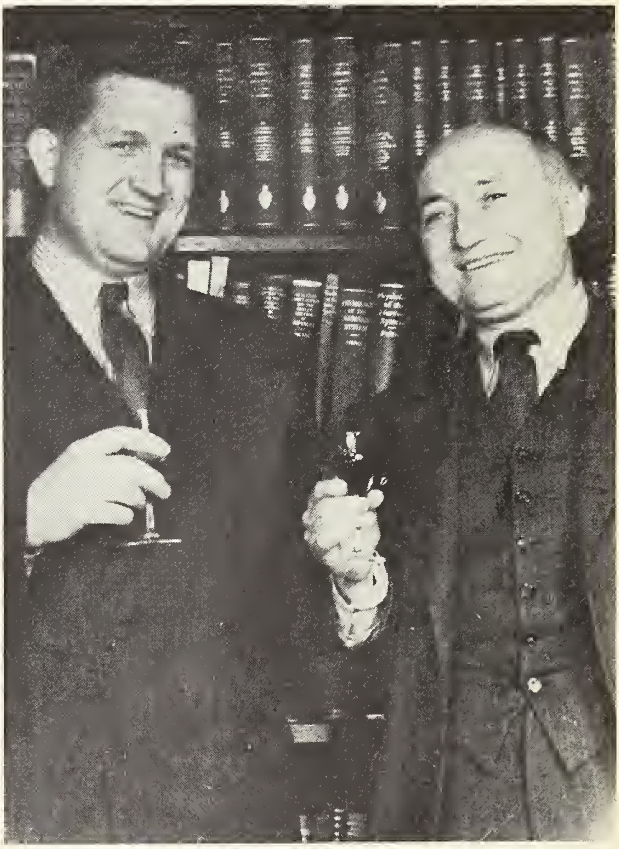
I've been interested for some years in heroes. I've asked young people especially: "Do you have any heroes? If so, who, and why are they?" I have my several, each fitting in a different niche, and whom I try to emulate. Dr. Louis Nahum was one of my heroes. For me, he was one of the rare ideal physicians. I found him always to be gentle, understanding, interested in a person and in his interests, and kind. I'm sure he must have been this way to his patients also. But most of all, he exemplified to me the "physician-learning." His love for learning reminded me frequently of what I have read of Sir William Osler. His "editorials" are gems, not only for their scientific content, but as demonstrations of the difficult art of gleaning the essentials of articles from a wide, diverse range of journals, and distilling them into short, concise, clear, and interesting "editorials," as he called them. I wonder how many have counted the references he used each month—usually over 50! He has been demonstrating to us for years the trend in our profession—of life-long continuing medical education—at the age of 79!! I know no more than several persons who at his age have the intellectual curiosity and mental capacity that Dr. Nahum had. Though I never told him that he was one of my heroes, I feel that he intuitively knew this from our too few personal discussions, always a stimulating joy to me. It is the few physicians like Dr. Nahum who make ours the most respected of all professions.

Fred Fabro, M.D.

Thirty Years After
In Memory of L. H. Nahum

The whole of Lou Nahum's adult life was bounded and buttressed within the rectangle of Yale University, his home, the medical community, and the people of New Haven. Within them, he moved freely and fully, recognizing early that there was an inescapable unity among them. If they were boundaries, they were not confining, for New Haven and its institutions were open to the world, and from this secure base his influence could and did spread in ever extending circles. In the ten years of our almost daily association, I came to know the Yale University School of Medicine well; it was my particular vantage point, though it included but little of the University as a whole. I knew his family and friends, and something about New Haven and its people. The medical profession apart from Yale was mostly outside of my purview, though Nahum told me much about it and introduced me to some of its most representative figures. Because of the circumstances these encounters were always good and I conceived a most favorable impression of this fourth side of Lou Nahum's life. Naturally, my own account cannot deal adequately with this aspect, and others must speak for it: of necessity it has to be largely autobiographical.

On an early Fall morning in 1932, my brother and I finally reached New Haven in an old 1929 Ford tudor sedan from our family home in Kansas where we had spent a few weeks between our graduation with new Ph.D.'s from Oxford after four year's study there and the opening of the school year at the School of Medicine at Yale University. We were looking forward to working in John Fulton's new Laboratory of Physiology, but we knew that there was much more to accomplish; our experience in Oxford had confirmed us as physiologists, but in England almost all of the accomplished physiologists including Sir Charles Sherrington, our Professor, and my tutor, Jack Eccles, were physicians before they were physiologists, and had a basic and broad medical viewpoint. The good fortune that had brought us to our Ph.D.'s we were resolved to use to restore our depleted, or rather non-existent financial resources, complete our medical studies, and then in some way or another, apply our physiological knowledge in the broad field of medicine. So, parking precariously along Cedar Street, we entered the rotunda of the new medical building with its star-studded ceiling, passed the "bathtub" presided over by the dear Mrs. Corbin for so many years, and took the middle doors that led to the Physiology wing and our futures. In this office, to welcome us, was the departmental secretary, Helen Sullivan, who would become my wife four years later.


Dr. Hoff and Dr. Nahum in one of their gay moments after a strenuous research session.

There was no doubt that a revolution had taken place at the School of Medicine. There were the new buildings fronting Cedar Street housing Pathology on the left and a private pavilion on the right as one looked across at it. On "our" side of the street were a wing housing the Institute of Human Relations, a central wing for Physiology and Pharmacology, and a wing for Biochemistry. More importantly, practically the entire faculty was as new as the buildings and so too was the program of research, practice, and instruction. John Fulton was Chairman of Physiology and had already begun the studies on the motor cortex of the primate that so thoroughly shook up the conventional ideas of cortical control of motion. Henry Barbour was in Pharmacology; his studies on the control of heat regulation by the hypothalamus already classics. The Institute of Human Relations was having a difficult time finding the central theme for its existence; its only failing was that it was a good fifty years ahead of its time, but if the engine did not work as a whole, there were admirable and exciting parts. Walter Miles was pioneering the instrumental approach to experimental Psychology, Arnold Gesell was learning about child psychology by observing spontaneous behavior of the children who came to his remarkable day school, while a host of young psychologists like Don Marquis and Carlyle Jacobson generated an ambiance of excitement, energy, and productivity. Eugene Kahn was Professor of Psychiatry, lending his virtually unlimited scholarship, his biological view of human behavior, and forthright common sense to a subject that had hardly emerged from the alienist stage. Clem Fry was in his department and was consultant to the Yale students; his collection of medical prints was already fabulous. There too was Ed Gildea, trying to fathom, with inadequate tools, the chemical factors involved in mental illness, compensated only by his own insights. Warren Brown was there also, seeing everything, listening much and saying little, but learning along with his Psychiatry how to run a medical school: not too many years later he would be at Baylor as Chairman of Psychiatry and Associate Dean, recruiting me, Russell Blattner and Michael De Bakey to see if we couldn't make an educational revolution of our own in Houston.

Across the street, on the clinical side, was Grover Powers in Pediatrics, genuinely benign and interested in young people beyond the confines of his department. With him were Dan Darrow and his associate Herb Miller, doing for Pediatrics what Peters and Van Slyke had done for Medicine. Not everyone was a "foreigner"; Sam Harvey, the scholar of surgery, had come from Woodbury, Connecticut, and Herb Thoms in Obstetrics and Gynecology was from Litchfield; they too had active programs and an able echelonnement of younger people like Scotty Oughterson and Gus Lindskog. Time and prudence have somewhat reduced the use of Thoms idea of radiological pelvimetry in the past fifteen years but in a busy service as many as 20% of all deliveries are still guided by his valuable method.

Medicine was almost two departments, held together by the tolerance and an almost paternal pride and permissiveness of its Chairman, Francis Blake and by the fundamental loyalty of its most distinguished member, Jack Peters. Together, they made the Department of Medicine one of the truly distinguished centers for medicine in the country, and a host of associates and students, emulating one or the other of this great pair of doctors, grew to maturity and remained in the New Haven community or carried the departmental philosophy to other centers. Paul Lavietes and Alex Winkler, whose premature death deprived medicine of one of its best brains and clinical chemistry of one of its most productive exponents, remained at Yale, as did the genial genius, Jerry Klatskin. "Chunky" Robbins in Medicine and his attractive wife Marion in the School of Nursing—a regrettable casualty of the years—gave a certain gaiety and tone of friendly sociability to a community that if anything tended to be somewhat too serious, so also did Norton Canfield in Otolaryngology, Bert Anderson who headed up the dental clinics, and Sump Arnim from his group who continues the tradition in the Dental Branch of the University of Texas and in the Biomedical Graduate School in Houston.

Some personalities from former times remained, and made their own contributions, Lafayette Mendel continued as Professor of Biochemistry, a great figure who had helped to found the specialty, and assure its future through his students; he had been, perhaps, the chief influence in Nahum's earlier years. With him was one of the last exponents of nutritional studies in a medical school, George Cowghill, and the newer group of future leaders such as Abe White. C. N. H. Long soon replaced Mendel on his retirement and added new dimensions of his own to this great department and a new dimension of candor and directness to the whole school.

George Blumer, one of the great and last encyclopedists of medicine, and once Dean, was largely in consultant practice, and it is a tribute to his continued loyalty to the school and to his strength of body and mind, that during the war years he came out of retirement to do his share in the hospital and with the students, to stand in for the younger men who went to war. Yandell Henderson and Howard Haggard had been separated in part from the Department of Physiology with a Laboratory of Applied Physiology of their own, where they continued to work; eventually they were to bring in to being the first center for the study of alcohol; they too had visions far beyond the contemporary ideas of what medicine should be doing.

In the catbird seat, a vast office of almost napoleonic splendor and dimensions, flanked by a series of devoted secretaries like Connie Weeks and with those remarkable women, Miriam Dasey as Registrar and Lottie Bishop as Executive Secretary, was that pluperfect, prestissimo, grand master of all Deans, Milton Winternitz. Coming to Yale as Professor of Pathology, with an almost apocalyptic vision of what a great medical school ought to become and the energy and drive to accomplish his purposes, he had, virtually single handed, devised the program for the new school's activities, planned its buildings, sought and obtained the support of the Rockefeller Foundation and enlisted the faculty. He chose better than he realized; a distinguished group of leaders in their fields with their own visions of what they wanted to make of their own departments along with their own highly developed independence and egos. Such persons were not to be orchestrated, however brilliant the conductor. Winternitz had the concept of a medical school that would approach its students as mature individuals capable of developing without excessive coursework, in an essentially graduate atmosphere, and a medical center that would offer exemplary medical care in an atmosphere of scholarship and investigation, with a full and free flow of ideas in an unbroken self-sustaining loop of laboratory, bedside studies, practice, and teaching. Bert Anderson expressed it as well as anyone has: "Research gives life to teaching, and teaching gives permanence to knowledge, and practice gives meaning and direction to research and teaching."

So the full orchestration of the School proved an impossible, and, in the long run, an unnecessary task, and Winternitz did not remain as Dean of the school he had made. Though he was at times bitter about the people he had selected, he had done his job well—they had been selected in his own image. Winter continued as Professor of Pathology, still energetic, still combative (he had once offered to put on boxing gloves and have it out with a student who had managed to get cross-wise with him), and still looking for a different pattern of teaching to surmount departmental barriers. Together, we started to put together such a course in clinical pathophysiology but World War II put an end to it.

Naturally enough, a development of such a magnitude, so energetically fostered and so vigorously—and almost religiously—pursued by its new protagonists, was not an easy imposition on the medical community of New Haven; a town and gown polarization developed, certainly never of the magnitude or virulence that it has assumed under the same circumstances elsewhere, but requiring the tincture of time and quiet counsel devoid of the crusader's spirit. I recall one of those small parts one hears of a conversation that is wholly out of context but nevertheless leaves a lasting impression; dropping in at a drug store on Elm street one evening on the way home from the laboratory, I approached the counter just in time to hear a man talking to the proprietor pronounce with some heat, "and there was I, an Assistant Professor at Yale Medical School, and they had to bring in some punk from New York." I did not recognize him then nor did I ever encounter him again.

So the Yale School of Medicine was then a pluralistic society, pulsating with life and energy, a forcing ground for the young teacher as well as the student, a place to take a large view or a narrow one of medicine, a place to make the significant choice of a career, a whole large enough for a critical mass but small enough to meet everyone, to know many, and possibly make friends, without restrictions. It was truly the moving feast of Hemingway in a not-too-large New England city, and all of us feasted lavishly, somewhat indiscriminately at first, but with growing discrimination. I had been taught collaboration by my brother, by Jack Eccles, my mentor at Oxford, and I have practiced it all my life. At Yale I tried many ventures in collaboration, but quickly they came down to a precious few: Alex Winkler, P. K. Smith, and Lou Nahum. It began first with Nahum and developed most closely, with him, broadening into an all encompassing part of my life. It has so fully survived the ten years of our close association that I can still be surprised that thirty years have passed since I left New Haven.

In Physiology, we had our own society of young people reaching for direction and accomplishment, and the freedom to work out our own approaches. Dr. Fulton was well launched on his new approach to the primate cortex; Alan Keller had already helped him with his *Sign* of *Babinski* and had gone to his Professorship at Birmingham, and Carlyle Jacobson had started with him the studies on the frontal cortex that would lead in Moniz hands to the technique of frontal lobotomy. A constant stream of able neurologists and neurosurgeons came as postdoctoral fellows to participate in them; a list would still look like a roster of the leaders of these fields today. Peg Kennard was the permanent staff member most concerned with them. Dusser de Barenne was differentially thermocoagulating the layers of the cortex, Yale Koskoff was his fellow. David Hitchcock was pursuing his studies on physical chemistry with Leslie Nims as his able assistant. Harold Himwich was busy with biochemical studies that would lead him to his future career in brain metabolism; Joe Fazkas was his technician but he would persist in his ambitions, graduate from medical school and establish his own independence in research. None of these seemed areas where I could be effective and independent. Besides, I had begun to take an interest in the cardiovascular system from studies on the pacemaker of the heart that Eccles and I had carried out in Oxford (I had ruined a soleus motoneuron preparation by damaging the femoral artery in the decerebrate cat I was making ready for the day's work and Eccles suggested we expose the heart and see how the pacemaker of the heart behaved in comparison to a rhythmically discharging motoneurone) I had also discovered Thomas Lewis' "Mechanism and Registration of the Heart Beat" and had virtually devoured it.

So it was that I gravitated toward Lou Nahum, whom I began to notice at Fulton's admirable weekly seminars. In a department so totally devoted to neurophysiology, these seminars were unusual in their range. Held in the Departmental Library, surrounded by Fulton's remarkable collection of medical works, these seminars systematically covered the major topics of Physiology, enlightened by Fulton's comments and by readings from the appropriate original text. I have often heard Fulton accused of a superficial scholarship, but there were few circumstances in which he could not find the appropriate book, rapidly thumb its pages, and quickly come to a crucial quotation. At one of these sessions I was struck with Nahum's acquaintance with the work of Sidney Ringer and we lingered after the seminar to talk further about the subject. I soon learned that Ringer and Nahum had much in common; both earned their living in practice, and both were devoted to the laboratory and worked there regularly and religiously despite the demands of their practice (now I knew why Nahum was not constantly present in the laboratory). Nahum knew about Hope's work on the heart sounds and Thomas Lewis was one of the great stars in his scientific firmament. He felt that Lewis had missed the main usefulness of the electrocardiogram in not paying more attention to the S-T segment and the T waves, an aspect of the electrocardiogram of which I was then unaware. (Some years later at McGill, Ray Brow, whose work with Beattie and Long had utilized the appearance of chloroform-induced ectopic heart-beats to elucidate the sympathetic functions of the hypothalamus, recounted to me how he had brought Lewis an electrocardiogram with what came to be designated as Pardee waves. Lewis tossed it into a large carton on top of a cabinet, saying "I've seen a lot of these but I don't have time to spend on them just now").

So one thing led to another and soon we were making plans for work together, beginning by restoring to function an archaic old Hindle electrocardiograph with its enormous electromagnet, its arc-lamp illumination, its compensator box and its excellent camera and paper container. In the dry weather of New Haven's fall and winter, static electricity was always a problem and at more than one crucial point the string was attracted to a lens and stuck there. I had never encountered this problem in rainy Oxford, but Nahum was an adept at plucking a hair from his head—where it was already somewhat thin—attaching it to a split in a toothpick, and gently encouraging the string (a quartz thread some 6μ in diameter) to leave the lens and return to duty.

Our very earliest papers were illustrated by electrocardiograms from this instrument and I am still pleased with the quality of some of the records, especially in our first paper, published in the *American Journal of Physiology* in 1932 (Vol. 110: p. 56). Later on, irked at the unwieldiness of the ensemble, I attempted to make it more compact and give it the mobility of wheels, but in so doing, it became overly top-heavy and while wheeling it from one room to another it toppled over, the magnet tore loose and the microscope tubes were bent beyond repair. Natchie arrived as I was contemplating this scene of ruin and instead of doing an experiment that day, we drove together to Bridgeport where Charles Hindle now lived, starting to develop in a small way a new compact electrocardiogram after selling his original interests to the Cambridge Instrument Company. This was our first visit to Hindle; we designed a hermaphrodite instrument mounting the old camera and its useful larger sized exposed film box on our old chassis with one of his new instruments made with a permanent magnet and an automobile headlight bulb which we equipped with an overload switch for the actual time or recording (In later visits we often talked about Hindle's early experiments in making the first American electrocardiograph). Our new instrument performed admirably until the first Sanborn recorders appeared and we were able to couple the instrument to their phosphorescent lag-screen so that the development of the changes in the ECG could be monitored and the film exposed at the right time. Until then we practiced the frustrating art of reading the shadow of the string directly.

The old studies of Reid Hunt had produced acetyl B-methylcholine, a muscarinic acetylcholine analogue more resistant to esterase than acetylcholine itself. It was indeed one of the most potent biologically active agents Hunt had seen, and Merck began to make it available. Nahum and I used it for this activity in a number of studies on ventricular fibrillation after electric shock, and in time became aware of its function in atrial fibrillation, converting flutter to fibrillation, and arresting atrial tachycardia in man as well as in animals. We became convinced that ventricular fibrillation was involved in death after myocardial infarction but found an unresponsive audience in cardiological circles of the time; it was simply too early then to monitor patients post-infarct, so realization of the validity of this suggestion had to wait for the development of the newer techniques after World War II. From Sidney Ringer we adapted our studies of the effects of the ions on the mammalian heart and so also we found Adrian's discovery of the supernormal period in the frog's heart applicable to the mammalian heart, and correlated it to the U-wave. Bruno Kish brought to us the idea of producing S-T segment displacements by superficial application of KCl, and we adapted this technique to mapping out the representation of the cardiac surface in the limb leads. All in all, we worked together in the experimental material and on the writing of 39 papers.

In all this work, Natchie proved to be the perfect collaborator. He was fertile and innovative, knowing how to view a subject from a number of angles to choose the most promising approach. His practical experience as a cardiologist brought in daily thoughts on new problems and new ways of approaching old problems. He reasoned logically and critically but was able to work with energy and enthusiasm and let one experiment guide the next until time came to apply a rigid critique to the whole. He shared the whole work; the dissection, the development of the film, the fabrication of good figures, and the writing.

It seemed only natural that our collaboration in the laboratory should continue out of it, and while we discussed our immediate research problems, there was also time for wide ranging discussions of Medicine, its history and future, of the philosophy of science, of politics, economics, and social problems. Natchie had a wide circle of friends in medicine, law, business and politics; some were old friends and classmates and some were patients, but all recognized the breadth of his intelligence, the logical cast of his mind, as well as his interest in them as people. So he became a veritable magnet for new and forward looking ideas, and the people who had them, and out of this store of wisdom became a valuable resource for advice and counsel. He was one of the very few physicians who moved freely between town and gown, playing an important part in reducing tensions and promoting common causes, such as in the annual clinical conferences which he organized for many years. (Some few at Yale thought he was too friendly with the town physicians, while some of them thought he was too friendly to Yale. Once a patient expressed some jealousy of the time he spent in the laboratory).

Above all, he was sensitive to the feelings and aspirations of younger people and quietly managed to get them started in the right direction, often before they fully recognized their own needs. He knew, for instance, of my ambition to complete my medical training; one day, we drove to Boston and visited Herrman Blumgart and one way or another I was accepted into the third year at Harvard, had a part-time job with Blumgart, a tuition fellowship, and two remarkable years at Harvard before returning to Yale.

Nahum was not religious when I knew him, though he once remarked that he had been an ardent Zionist as a young man, but he had a love of learning that conditioned all of his life and showed its origin when he spoke with understanding and affection of his visits to the temple where his father would sit with the elders in the gathering twilight discussing the intricacies of the Talmud. He too had some of that quality of pure intellect, and the ability of withdrawing from the hurly-burly of the world to reflect on its problems. He achieved this at times as we sat late over a slow experiment, but best of all at home, immersed in the sound of music which always filled it, while talking or thinking of distant things. He had much of his mother in him too; she had been the practical one in the family and he had her talents too, and in a unique way he put them together in a single life that was at once idealistic and scholarly, and practical and commonsensical.

At the very prime of his life when I knew him, Natchie was serious-minded, as though his devotion to the best in science and medicine had suppressed a rich vein of good humor and love of life that was only then beginning to come to the surface. Certainly he had been even more serious as a youth, earning his way through Yale College and the Medical School. It was not long before I began to understand the source of the leaven that was at work within him. As a Yale undergraduate he became one of a group of young men who were attracted to the Koskoff family home by the wonderful cooking and unfailing hospitality of the mother, the rugged masculinity of the father, the pretty and talented girls in their early teens, and a quartet of talented and uninhibited boys who attracted still more pretty girls. The house was filled with music, laughter, and tolerance. The father was a veritable Gideon, affectionately autocratic, with a deep musical voice that rumbled up from a mighty chest; in his earlier days he had sung impartially in the Temple on Saturdays and in church on Sundays. His wife managed the house with calm efficiency, was a leader among the ladies at the temple, together they maintained a home overflowing with life and living. Here Natchie found the right counterbalance to his own life in Stella Koskoff, and as soon as she was old enough and he could afford it, they were married, creating in their own home an atmosphere where his own seriousness could be tempered by Stella's vivacity, where his science was balanced by her music and where they could both join in the affectionate company of their friends and family and in dedication to the service of their community.

Natchie had a deep vein of social concern and a broad love of humanity. The Italian group in New Haven was especially dear to him, and he to them. Dr. William Verdi was a very special friend and we would not infrequently visit his little sitting room off the surgical suite at St. Raphael's Hospital while Verdi would have coffee between operations, and, a good natured Mephistopheles in a scrub suit, recite passages from *Faust* in perfect German. The rise of the Nazi regime brought deep sorrow to Natchie and he did much to help the refugees who were able to make their way to this country. He was as equally distressed by religious or racial intolerance in this country, and played his part in the Council for Christians and Jews. Essentially, though, he was not a joiner and took little part in popular movements. Not that he was unconcerned, for he was sensitive to all intolerance, all social injustice, and to all arbitrary and irresponsible exercise of unrestrained power at any level, but above all, he was notable for a *steadiness* of spirit and purpose that could not include the adoption of variable causes. Rather, he exerted his influence through the large circle of his friends, who in turn strove to emulate him among their friends and in their own professions. From the confines of the hospitable house on Loomis Place, where he was most relaxed, and could be free to think, to plan, and to advise, his influence spread in widening circles, not always recognizable, but his nonetheless.

Some of all that I have recounted will explain why, as I rode back to Loomis Place with two of his brothers-in-law, after the funeral service at the Temple, I agreed with the distinguished lawyer who tried to sum it up by remarking that "It was Natchie who taught me how to think." I had to add "Yes, but he also taught me how to feel."

This has been hard to write, not only because it deals with a firm friendship that deserves the best and most honest history possible, but because it concerns an era and a whole group of people that have never been clearly portrayed, and one thought has evoked a dozen more. There are no good biographical portrayals of Milton Winternitz, of Jack Peters, of John Fulton and many more, nor of the School of Medicine at Yale in those formative years of its greatness. Readers will understand my conscious borrowing of the title from Dumas' tales of d'Artagnan and his musketeer friends. To so many of us the early years at Yale were a golden age of excitement, adventure, and accomplishment, not a little intrigue, and the forging of friendships that have endured.

Hebbel E. Hoff, M.D., Ph.D.
Professor and Chairman,
Department of Physiology
Baylor College of Medicine
Houston, Texas

Louis H. Nahum, M.D., Humanist

A few short months ago, the membership of the New Haven Medical Association presented a scroll inscribed: "For Outstanding Service Presented to Louis H. Nahum, M.D., Humanist, Physician, Internist, Cardiologist, Physiologist, Teacher, Writer, Editor and Friend of the Healing Arts. For Fifty Years of Dedicated Service to the People of Connecticut and Especially for His Contributions to the Advancement of Medicine."

His singular greatness does not lie in his scientific achievements alone. As a medical man and as a scientist, he was first a human being and a lover of human beings.

His articles in *Connecticut Medicine* were philosophical and sociological, as well as medical and scientific, for as a doctor dedicated to improving the quality of life, his writings demonstrated an interest in what society does to human beings. As his beloved Stella told me, Lou believed that in order to cure people, we must first cure social ills.

His respect for the quality of each individual life was coupled with an enormous commitment to social justice. A strong advocate of civil liberties, civil rights and the peace movement, Dr. Nahum had an intense love for the Jewish people and culture and was deeply committed to the integrity of Israel and proud of the Jewish prophetic-humanistic tradition of which he was a true exemplar.

He was a sweet and gentle man; a physician and a friend of the healing arts; a lover of his wife and family, of his people and of all people. He was a cardiologist, and a lover of the human heart.

July 27, 1972
Rabbi Charles D. Lippman

Reminiscences

While joining others in tribute to Dr. Louis H. Nahum is a great honor, it is small recompense for the loss of a great man and a beloved friend who, during a period of 40 years, immeasurably enriched my life, as has been true for so many of those with whom he came in contact. Dr. Nahum gave freely and generously not only to his family, but to many others: individuals with illnesses, colleagues with difficult problems requiring his mature advice, students who developed critical judgement under his brilliant and scholarly tutelage and writings, and friends who frequented his home. Dr. Nahum may, based upon my knowledge of him, be epitomized by many laudatory phrases, but foremost among these would be that of an unselfish, generous man giving of himself to others in all walks of life.

In my recollection of the many examples of the above description of Dr. Nahum as a man, there is one, in particular, which has additional significance in emphasizing Dr. Nahum's many scholarly contributions. I refer to our both being asked to serve as members of the first Advisory Council to President Belkin of Yeshiva University to assist in the planning of a new medical school in New York City for which the University had received a charter from the Board of Regents of New York State.

Dr. Nahum's wisdom and advice were immediately evident in the work of this Advisory Council. His many years of active participation in the teaching and research programs at the Yale University School of Medicine, coupled with knowledge from his own medical practice of the problems confronting a physician in a community and the required training for solving such problems, were of inestimable value in formulating sound and forward-looking programs and policies for the new medical school.

Of prime and noteworthy significance was Dr. Nahum's original and sagacious suggestion that the new medical school be named after Albert Einstein. To Dr. Nahum, Professor Einstein symbolized the fusion of a scientific training and a strong social consciousness, two attributes essential for an understanding and compassionate physician. The Advisory Council immediately recognized the brilliance of Dr. Nahum's suggestion. A visit was arranged to Princeton to secure Professor Einstein's approval to which this great man, with modest reluctance, gave his consent. Subsequently, the naming of the new medical school, the Albert Einstein College of Medicine of Yeshiva University, was approved by the Administrative officers of the University.

The admission of the first class of students to the Albert Einstein College of Medicine in 1955 did not terminate Dr. Nahum's interest in, and support of, the new medical school. Indeed, for almost a dozen years he was a guest lecturer in Physiology during the curriculum of the first year. Thus, the new medical school also had the benefit of the superb, scholarly lectures delivered by Dr. Nahum. In addition, he remained a loyal supporter of the Albert Einstein College of Medicine and made efforts to enlist the financial contributions of his numerous friends in support of an institution for which he had suggested a distinguished name, and to which he contributed in its planning and to its rapid growth and de-

Dr. Louis Nahum and Dr. Abraham White at the Nahum home.

velopment. In addition to Dr. Nahum's profound interest in the Albert Einstein College of Medicine, he provided the institution with one of its distinguished graduates, his son, Dr. Jeremy Nahum, presently a member of the faculties of the Harvard and Tufts medical schools.

Dr. Louis Nahum was, in every sense, both a member and "honorary alumnus" of the Albert Einstein College of Medicine with which his name and contributions will always be associated.

Abraham White, Ph.D.

Formerly, Professor and Chairman, Department of Biochemistry, and Associate Dean, Albert Einstein College of Medicine of Yeshiva University. Presently, Senior Scientist, Syntex Research, Visiting Professor of Biochemistry, Albert Einstein College of Medicine and Stanford University School of Medicine, Palo Alto, California.

The Complete Physician

My own fond memories of Lou Nahum go back to the Fall of 1934. At that time the highlight of the freshman year at Yale Medical School was Nahum's cardiac physiology lectures. Comprehensive, lucid, combining clinical experience and current research knowledge, they were models of what medical teaching should be. The orientation to human health and disease flowed naturally from the subject, unlike our present synthetic efforts to introduce man as an interlude between passionate discourses on cell membranes or complement fractions. This opportunity to observe an astute clinician applying "basic sciences" to patient problems was a rare one and the students were grateful for it.

My path crossed Nahum's again on the Editorial Board of *Connecticut Medicine* and since 1959 we discussed the Journal almost weekly. The problems of the editor of a state medical journal are numerous. How does a general journal get top-notch articles in an era of increasing specialization? Most authors nowadays prefer to communicate in their own specialty magazines where they will be read by peers who understand their jargon and who also distribute their research moneys. If a state journal gets very specialized articles will enough of the readers be interested? How do we cope with bad articles, particularly ones solicited by the editor? Louis worried about offending contributors, fearing that harsh criticism or outright rejection might blight a promising career in clinical investigation.

Another problem which bedevils editors is the economic one; how do we balance income and expenses? Louis gave long thought to this problem which sometimes threatened the very existence of his favorite journal. How much is good shiny paper worth to readers? Should we solicit advertisements for health-threatening objects like cigarettes or whiskey? Is this a good year for drug company advertising or is there some new Federal rule which discourages this type of expenditure?

Besides the Journal his other intense professional interest was his practice. "His" patients were "his" in the standard usage of the family doctor, denoting an interest as much personal as medical. There were long office discussions between Dr. Nahum and his devoted office assistant Helen Putt; these were concerned with what could be done better in treating, or comforting or encouraging a patient or a family.

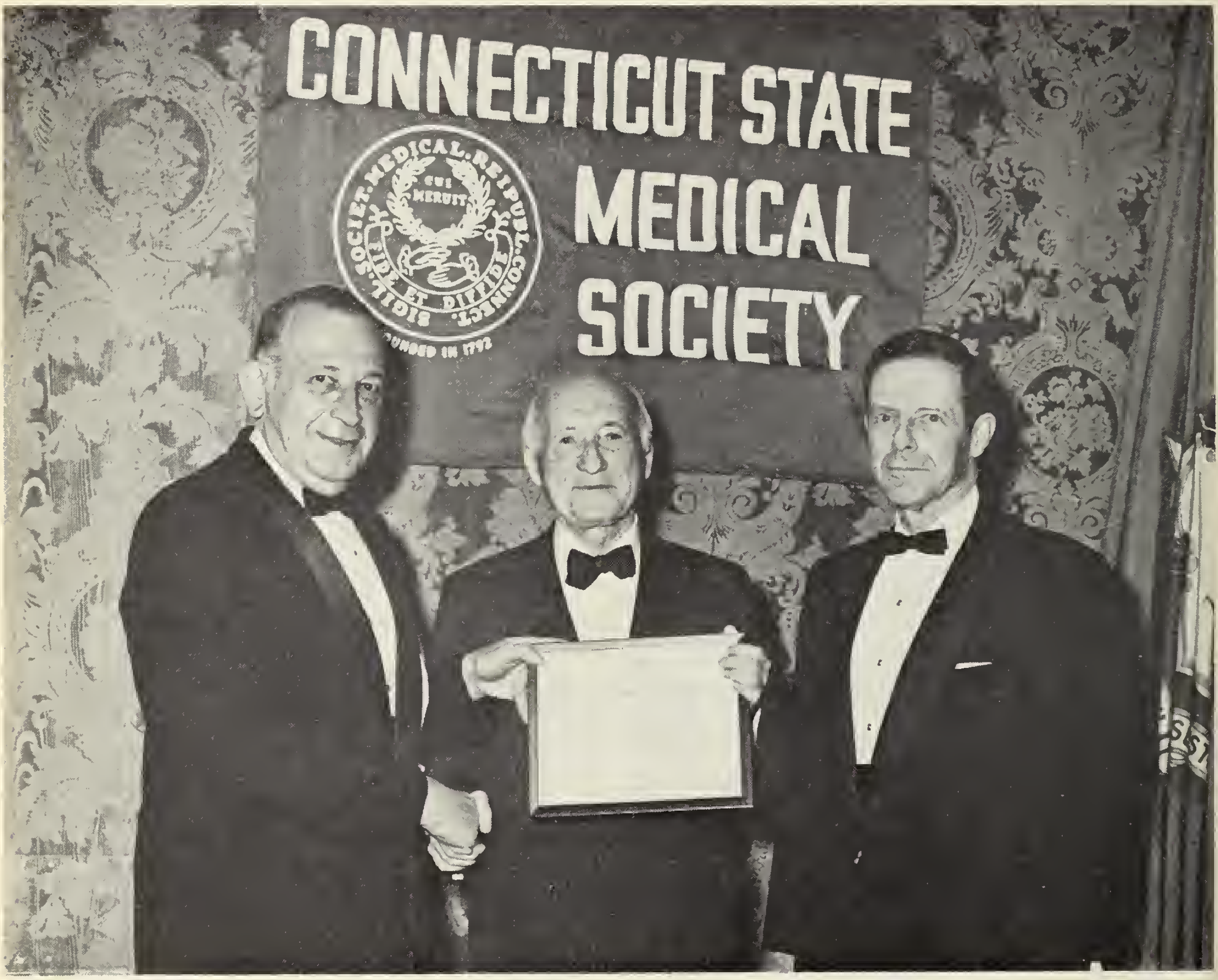
Farewell then to an old friend whose career combined top quality medical practice, basic and clinical research, undergraduate and graduate teaching, and dedication to the advancement of organized medicine. He was a worthy example for physicians of the future.

Roy N. Barnett, M.D.

LOU AND THE CONNECTICUT STATE MEDICAL SOCIETY

Dr. Louis H. Nahum, for twelve good years the Editor of our *Journal*, was a man whose acquaintance and professional association meant a great deal to a great many people. He was held in respect and high esteem by all members of the Society's staff, and, in particular, by the undersigned. Lou began his tenure as Editor in 1958, the same year that I became the Society's executive officer, and it was my privilege and very good fortune to have had so many opportunities over the years that ensued to discuss with him at length matters of interest and concern to the medical profession—both scientific and socio-economic. Our points of view were often quite different, but he never failed to listen patiently or to respond moderately. He will be missed but long remembered.

William H. Richards, M.D.
Executive Director



Fifty Years as a Practitioner. Being honored by Presidents Granoff and Weber.

Louis H. Nahum, Editorialist And Essayist

To those of us fortunate enough to serve with Lou on the Editorial Board of *Connecticut Medicine,* all looked forward to each meeting as a chance to bask in his warm personality. My fondest memories include Lou chairing a meeting in the Gold Room at the State Medical Society Office, coatless with a jaunty bow-tie, greeting each late arriving member and shaking his hand and thanking him for coming. He continually attempted to define the role of a state medical journal and to justify its existence in an era of rapidly increasing numbers of specialty journals.

He introduced the reproduction of interesting and historic pictures on the cover of our *Journal,* this practice copied quickly by the *Journal of the American Medical Association.* He sought experts who would serve as guest editors for the special issues that have been so popular with our readership. His editorial standards were very high but he would help the new author to polish his essay to meet these standards. He was also concerned about the feelings of authors whose manuscripts were rejected for publication.

His editorials brought the *Journal* wide acclaim. For fourteen years, he wrote over 120 editorials a year that were amazing in their scope. Pertinent portions of some of the most memorable editorials are reprinted below. His range of interest was extraordinary. He wrote on problems of ecology and genetics in 1964, he stressed the patient as a person, the need for the physician to remain a student for life, and the necessity of every clinician to become familiar with the scientific method, no area of human endeavor escaped his interest. For many of us our only familiarity with the journals, *Science* and *Nature,* came from Lou's comments about specific basic research printed in these journals and made clinically important by an amplifying paragraph.

W.F.E.

"Hypothesis or Conclusion?"—June 1962

Medicine having become a science, the medical man must learn to distinguish between a hypothesis and a conclusion. A hypothesis is formulated from relevant observations, a conclusion follows properly designed experiments to test the implications of the hypothesis.

"The Blueprints of Life's Architecture"—March 1964

Advances are coming so fast in genetics, that a real understanding of the most intimate nature of life may not be far off. . . . Ultimately we may be able to fashion living species to order, produce babies with predetermined traits and features! The moral, economic, and political implications of these possibilities are staggering. Is mankind ready for such powers? Just as we have not been prepared for the problems arising out of the mastery of nuclear energy, neither are we prepared for the ethical and other dilemmas with which genetics will confront us soon. It is time we begin to think about it.

"The Doctor-Patient Rapport"—August 1964

Everyone agrees that there is much more in the healing art than the administration of medication. The road of pain and disability is easier to travel if the physician is able to relieve anxiety and instill confidence that his ministrations will succeed. . . . It would be important to know in general, the degree of rapport that physicians establish with their patients. "Affections can warm the coldest temperament and soften the hardest heart." It is time we begin to ascribe some concrete meaning to what the physician turned philosopher demands of us in the successful pursuit of the art of medicine.

An Appreciation

I had the privilege of knowing Dr. Nahum since my high school days when he married his beloved Stella whose family was very close to mine. He was a gentle man, a scholar and a humanitarian. His work in the laboratory was distinguished and he gave of his time and efforts freely to this. His prime interest, however, was in medical care.

While he carried over his scientific intellectual approach to his clinical problems, he never let his patients become just cases. They adored and trusted him not only because he knew how to treat illness but because he made all of them feel that they were of importance to him as human beings. This was true regardless of their means or station in life as I have learned from the many patients I have seen for him during periods when he has been unavailable for various reasons.

A man of extraordinarily broad interests, care of people's health was the prime one. He welcomed the challenge of difficult problems and only in the past year confided to me that he could not be satisfied coasting along seeing just "nice cases". As late as a month before his demise when he was at home because of increased angina he questioned whether he could accept retirement since medicine was his life.

In his many years at the helm of the *Journal*, Dr. Nahum was able to extend his contribution to medical education in the state while raising the quality of the *Journal* to reach national recognition. His many editorials were a tribute to his prodigious reading, analytical mind and keen judgment. The broad range of subjects which they covered was an unending source of amazement and they served to inform and stimulate many colleagues. Dr. Nahum maintained a close relationship with the local press and was able to give it professional guidance in relation to reporting medical matters of interest to the public.

Dr. Nahum's contributions to medical care, research, teaching, editing, and to humanity were great. He will be sorely missed and long and warmly remembered.

Paul H. Lavietes, M.D.

The Nahum Family

My Special Memories Of Dr. Louis H. Nahum

My last sight of Dr. Nahum is a memory that epitomizes his general devotion to the Journal and his particular devotion to the task into which he poured so much of his seemingly inexhaustible energy, an energy that would have been remarkable in a man of half his years. He was sitting at the writing table in the study of his home and zealously at work on an editorial that he was anxious to finish for the current issue. This was his idea of how a man should spend his days of rest and recuperation, working at a job he loved. For it was nothing less than the most selfless dedication that used to bring him into the Journal office before 8:30 in the morning—before the rest of the staff, who in fact would find him with his head already deep in work—early enough so that, after dealing with the editorial problems that required his attention, he could go on to his office and to the patients who would be waiting for him. He always headed for his car at a walk that was close to racing speed.

It was one of my duties to see his editorials through manuscript preparation and printing, and yet even I would find it difficult to do justice to the full scope of his contribution. More important than their number, however, was the astonishing variety of their subject matter, a variety at which a great number of doctors expressed their admiration in letters written to Dr. Nahum by way of congratulation. There seemed to be no aspect of medicine on which he could not prepare an illuminating piece, and, as someone who was often in need of his guidance on technical questions, I can testify to his never-failing skill in transmitting the content and meaning of all manner of special medical knowledge with cogency and lucidity.

While Dr. Nahum was Editor, it was difficult to imagine how we would carry on without him.

Our efforts, now, to maintain the traditional high standards of the Journal would be the memorial that I think Dr. Nahum would have liked best.

Vivian C. Feriola,
Assistant to the Editor

Dr. Nahum and his first grandson, Jed.

Connecticut Medicine

SEPTEMBER, 1972
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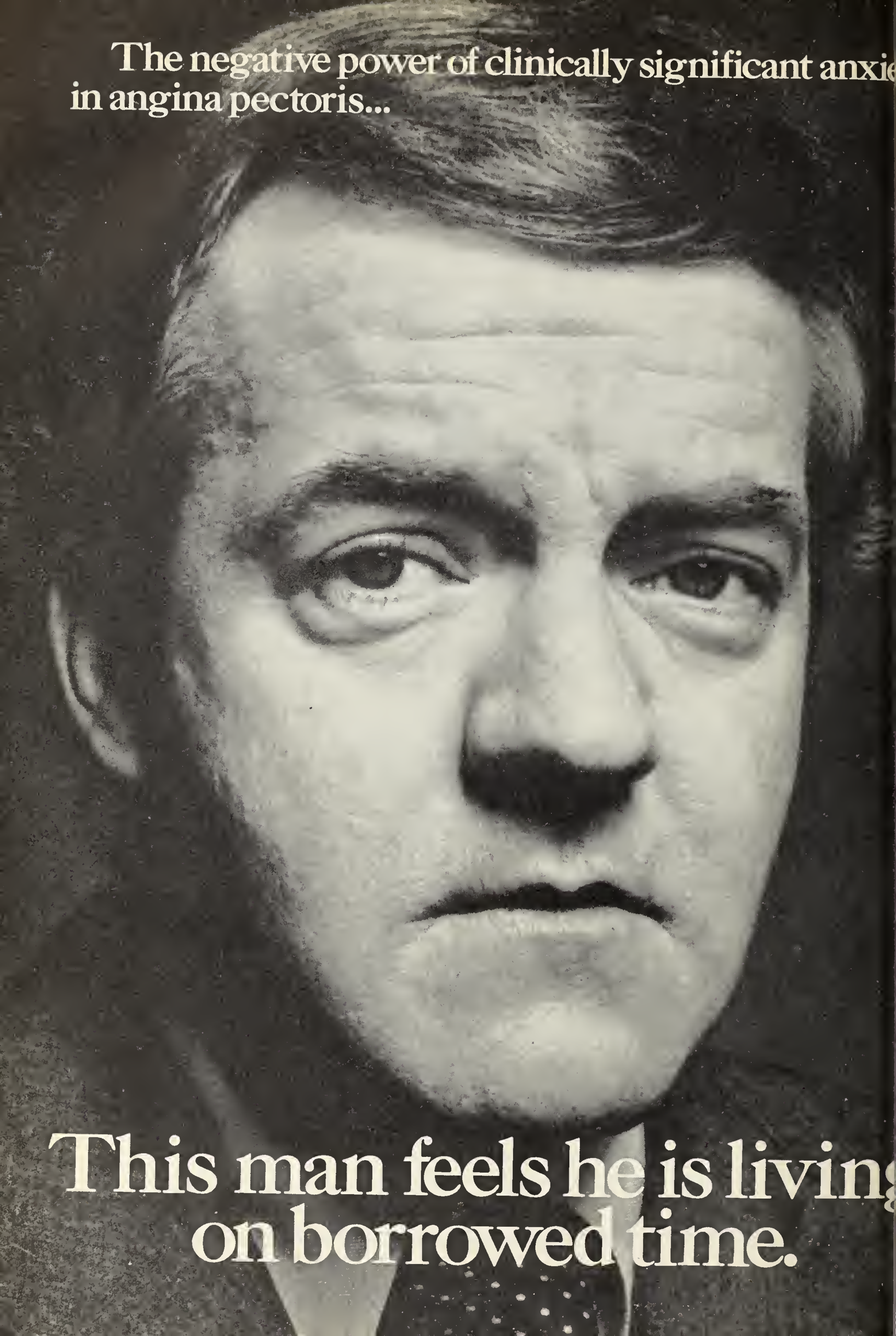
The negative power of clinically significant anxie
in angina pectoris...
This man feels he is livin
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THE PRESIDENT'S PAGE

There has been a recent rash of articles concerning the formation of physicians' unions. There is nothing new about the concept of doctors banding together in a union. In fact the AMA has been referred to as a union, a derogatory term applied to organized medicine by those who would denigrate any form of organization of physicians which would, through numbers, give a voice to doctors which they would not otherwise have. However, by no stretch of the imagination can the AMA be considered a union. To begin with, a union is, by definition, an organization of *employees,* formed in order to present a united front when bargaining with employers for improved pay and working conditions. The only doctors' unions in this country have been those made up of doctors working for municipalities, shipping lines, etc. In other countries where nationalized health systems have made employees of doctors, unionization has followed.

It is questionable whether or not doctors in this country may, at this time, legally form a union. This question has yet to be adjudicated. It would appear to me, as a non-lawyer, that they could at most form a trade association. Nonetheless, a group led by a San Francisco surgeon, has organized a union claiming a membership of 15,000, in order to be in a better position to bargain with government or other third party payers. There is no question but that in so banding together they will be better able to bargain from a position of strength. But in the last analysis, the strength of a union derives from two sources. First, the potential of enrolling voluntarily, or by compulsion, a majority of the "workers", and, second, the leverage given their bargaining demands, of the threat of a strike. The likelihood of enrolling a majority of the doctors in a union seems remote, at this time.

The official position of the AMA, as expressed by its newly installed president, is in opposition to unionization. The possibility of a doctors' strike is inconceivable. Nevertheless, were conditions to change, should nationalization of health services force physicians into the role of employees of a monolithic health care machine, joining a union might, at that time, appear to be the only method for doctors to exert some control over their destinies.

The Connecticut State Medical Society has taken no official position with respect to the formation of a doctors' union, and while pronouncements of the AMA are not binding on the CSMS, unless it acts to disavow the anti-union stance, the assumption is that it concurs.

It is for this reason, as well as rumblings among the members, that I believe it is high time that unionization and all of its ramifications be thought about and openly discussed. It may very well be overdue, or, as some believe, too late. But this much is certain—such discussion must begin *now!* The leadership of organized medicine must lead, not by the enunciation of policies but by eliciting the reactions of the membership to such a question as the formation of a doctors' union, in order to obtain the mandate which, in a democracy, is the only basis for a major change in the established order.

David A. Grendon, M.D.
President

Foreword

INTRODUCTION TO THE TRAUMA SYMPOSIUM: ADVANCES IN TRAUMA SURGERY

The motivation of the Department of Surgery in preparing this Trauma Symposium is in part to present to you some of our clinical experiences with trauma problems to which surgeons have traditionally brought their diagnostic and technical skills, but more importantly to underscore the burgeoning interest in trauma as the "neglected disease of modern society". We are all aware of the magnitude of the problem, and while statistics are generally cold and impersonal, the impact made in this area cannot be missed. Nearly 10% of all deaths in the State of Connecticut, numbering nearly 200 individuals per month, are from accidental causes. Untold others are permanently maimed or disabled. Of personal interest is the effect on the pediatric population. Four of every ten children who die in the United States die because of injury; this exceeds the number who die of congenital malformations and those who die of cancer.

Recognition that trauma constitutes a national health hazard has stimulated intensified interest on the part of the physician, organized medicine, as well as federal, state and local agencies concerned with health maintenance. Medical schools are initiating their own programs and the Department of Surgery at Yale takes justifiable pride in its "Trauma Program" established two years ago. Individual programs have one goal: remedial action in the field of traumatology by a multi-disciplinary and multi-directional approach. The "looking glass" remains foggy, but distinct impressions are appearing. First: that innovative methods of communication, transportation, and expert training of para-medical personnel will shorten the "at risk" period before the patient is placed into the hands of the trained surgeon. Second: that the delivery of care to the trauma patient will be modified by regional planning, focusing special skills and facilities in fewer rather than more medical centers and finally that an intensified effort by surgeons working through their professional societies and at their own institutions will improve emergency care and gain a further understanding of the patho-physiology of injury.

Hopefully this symposium will stimulate interest in the trauma problems presented and initiate the fulfillment of these goals within our state.

Robert J. Touloukian, M.D., *Guest Editor*
Associate Professor of Surgery & Pediatrics,
Yale University School of Medicine
New Haven, Conn.

Recent Advances In Emergency Medical Services In Connecticut

Alfred M. Sadler, Jr., M.D. and Blair L. Sadler, J.D.

"Accidents are the leading cause of death among persons between the ages of 1 and 37; and they are the fourth leading cause of death at all ages. Among accidental deaths, those due to motor vehicles constitute the leading cause for all age groups under 75. . . . The human suffering and financial loss from preventable accidental death constitute a public health problem second only to the ravages of ancient plague or world wars."[1]

"Many of those injured in highway crashes die needlessly or are permanently disabled because they did not receive prompt and proper emergency care. Few areas of the United States now have adequate emergency services. In most areas there has been inadequate planning of emergency logistics, communications and transportation facilities, and present services are inadequately managed. Ambulance operators, drivers and attendants are commonly not required to be skilled in emergency care nor are they required in most parts of the country to carry adequate equipment in their vehicles. Hospitals and ambulances seldom have radio or other direct communications links either with each other or with police radio communications systems. It is imperative that highway and other Emergency Medical Services (EMS) be improved throughout the nation."[2]

These statements from the National Research Council and the U.S. Department of Transportation provide emphatic indictments of the current deficiencies in this nation's facilities and personnel for satisfactory management of trauma due to accidents. Our capabilities in this regard are so far behind those for other major health problems that accidental death and disability has been aptly called "the neglected disease of modern society."

Beyond the requirements of rapid response and management of patients with severe wounds, broken bones and shock, are parallel needs for the treatment of patients with heart attacks, strokes, drug overdoses, allergic reactions, diabetic coma, and other critical conditions. All of these acute crises demand a well-planned and organized system of emergency care response. Yet in Connecticut, as in much of the rest of the nation, no such system exists.

There are several reasons for the lack of such a system: 1) Many state agencies and private and volunteer organizations are concerned with only a segment of the problem. Integration and cooperation among these groups is a major and complex undertaking. 2) A thorough study of a problem of such great complexity, involving many variables, is difficult. It requires concentrated input from many disciplines including medicine, law, engineering, systems analysis, economics, education, communications, and law enforcement, to name only a few. 3) Because of the many questions and organizational issues involved, a statewide study is costly. Only recently have funds become available through the U.S. Department of Transportation's National Highway Traffic Safety Administration to match state and local contributions for undertaking an in-depth and comprehensive assessment.

Aware of these problems, a group of concerned citizens formed an Ad Hoc Committee on Emergency Medical Services in December, 1970, to begin to work toward improvements in emergency medical services in Connecticut. The Ad Hoc Committee has grown and diversified and meets monthly to discuss various aspects of emergency medical care. At the request of Dr. Franklin Foote, the State Health Commissioner, and Mr. Norman Booth, the Governor's Representative of the State Department of Transportation for Highway Safety, the Ad Hoc Committee has become the Connecticut Advisory Committee on Emergency Medical Services and advises both departments in this field. This Committee has assumed leadership for EMS in Connecticut. (For a current list of the Committee, see Appendix A.)

DR. ALFRED M. SADLER, Jr., Assistant Professor of Surgery, Yale University School of Medicine; Director of Yale Trauma Program, New Haven, Conn.

MR. BLAIR L. SADLER, Assistant Professor of Law, Yale University School of Medicine; Co-Director of Yale Trauma Program, New Haven, Conn.

The Emergency Medical Technician

The first major effort undertaken by the Connecticut Advisory Committee on Emergency Medical Services was the training of Emergency Medical Technicians (for ambulance staffing) in the Spring of 1971. This 81-hour course is supported by the U.S. Department of Transportation and state funds on a fifty-fifty matching basis.

The training course was based on a detailed series of discussions beginning in 1967 held by the National Research Council working with the American College of Surgeons, the American Academy of Orthopedic Surgeons, the American Medical Association, U.S. Public Health Service, and the American Heart Association. Designed to be more comprehensive than any previous course, it covers medical, surgical, pediatric, obstetrical, psychiatric, and medical-legal problems.

Utilizing the knowledge gained from this effort, the U.S. Department of Transportation's National Highway Traffic Safety Administration developed an Instructor's Lesson Manual and other course documents through a contract with Dunlap and Associates, Inc. of Darien, Connecticut. The documents were completed in 1970 and have been disseminated widely. A textbook entitled "Emergency Care and Transportation of the Sick and Injured" prepared by the American Academy of Orthopedic Surgeons is now receiving wide distribution. The American College of Surgeons, the AMA, the American Red Cross, and the National Research Council have endorsed the new textbook as "reflecting current and established principles of emergency care."

A graduate of the new course receives 81 hours of training comprising lectures and practical exposure to emergency medical problems. Included are 25 sessions on the most important aspects of emergency medical care and management. In addition, ten hours of in-hospital emergency department experience are required. By June, 1971, 201 individuals completed the Emergency Medical Technician program offered in six Connecticut communities.

From June 1, 1971 to June 1, 1972, an additional 165 Emergency Medical Technicians were trained in ten communities in Connecticut. The courses were given in hospitals and community colleges throughout the state and were coordinated by Mr. Marshall Frankel in the State Department of Health. The courses have been so successful to date that an additional 800 Emergency Medical Technicians will be trained by June, 1973.

The Connecticut State Ambulance Commission, which has authority over training regulations for personnel working on commercial ambulances, has indicated that it will adopt the 81-hour program as the required course effective July 1, 1974. A State Health Department survey in 1970 indicated that approximately 4,000 people in Connecticut are working either full-time or part-time on ambulances. Thus, many more people must still receive the Emergency Medical Technician Course. However, significant progress has been made and the initial results are already very encouraging.

Statewide Study and Analysis of Emergency Medical Services

Aware of the importance of detailed information in order to plan effectively and that needed information did not exist, the Connecticut Advisory Committee on EMS granted top priority to conducting the necessary study. The Yale Trauma Program was given the major charge to carry out this study under the overall supervision and advice of the Advisory Committee. Assistance has been provided by Dunlap and Associates, Inc. The purposes of the study are: to identify the deficiencies in the emergency care "system" in Connecticut; determine the steps necessary to remedy these deficiencies; project the cost of such steps; establish priorities and schedules to achieve the identified goals; and establish a system for program review, evaluation, and accountability. In carrying out these objectives, the study is analyzing: 1) organization and distribution of ambulance services; 2) financing of ambulance services; 3) ambulance personnel; 4) emergency medical communications; 5) financing and organization of emergency department services; 6) physician manpower in emergency facilities; 7) nonphysician manpower in emergency facilities; 8) the epidemiology of fatal accidents; 9) the potential use of a trauma registry; 10) the relationship of emergency medical care to disaster planning; and 11) legal and regulatory aspects of emergency medical services.

To accomplish this study, from July 1, 1971 to April 1, 1972, nine candidates for the M.P.H. degree in hospital administration from the Yale School of Medicine, Department of Epidemiology and Public Health, participated in the design of the study, collected the data, and completed a preliminary analysis of data under the direction and guidance of Dr. Alfred M. Sadler, Jr., Attorney Blair L. Sadler, and Dr. Samuel B. Webb, Jr. (Associate Director of the Yale Program in Hospital Administration). Two other members of the Yale Trauma Program, Mr. Thomas Brask (Director of

Communications) and Mrs. Carol von Stein (an epidemiologist) have contributed heavily throughout. Dr. Richard L. Pepler and Miss Karen Bratsenis of Dunlap and Associates have assisted the study team through expert consultation and critical review.

The methodology included a comprehensive review of all existing EMS literature, including the collection and analysis of every completed statewide study on EMS in the United States as of September 1, 1971. A comprehensive interview document was designed and administered personally to virtually all providers of emergency medical services in the state. Each of the 180 ambulance companies, 320 fire departments, 90 local police departments, the State Police, and 35 general hospital emergency departments were contacted. (Repeat visits were necessary to cover all EMS providers in a given region, institution or agency.) Retrospective and prospective data were gathered regarding available resources, utilization of resources, and areas of need. In addition, all physicians, nurses, and paramedical personnel providing emergency medical services were questioned to assess their current training, tasks, roles, and their opinions regarding future EMS manpower needs. Finally, all Emergency Medical Technician graduates in Connecticut completed questionnaires.

As requested by Governor Thomas Meskill, the study will provide detailed information about the availability and use patterns of the physical and human emergency services resources in the state; the gaps, overlaps and deficiencies of EMS services; and short and long-term plans to create viable EMS systems on a regional level. The results will be available in November, 1972, and, hopefully, will provide the platform for further changes in emergency medical services in Connecticut.

APPENDIX A

Connecticut Advisory Committee on Emergency Medical Services

Mr. Robert Bergeron, Director of Education, Connecticut Hospital Association

Mr. Todd Berman, Associate Director, Connecticut Hospital Planning Commission

Mr. George Booth, Assistant Administrator, Park City Hospital

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Panel Discussion: Some Thoughts On The Care Of The Burned Patient, 1972*

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Introduction

Accidental injury remains the number one cause of death in our population up to the age of 45 years. Among the types of injuries burns remain prominent, accounting for 12,000 fatalities per year, 120,000 persons hospitalized and 2,500,000 persons burned severely enough to require the care of a physician. It is the number one cause of accidental fatalities in pre-school children. Many words have been spoken but little has been accomplished in reducing the incidence of this seemingly often preventable injury. Among children dying from burns, fully one-half die as a result of an injury sustained when their clothing catches on fire.

Although available for a number of years, flame-retardant clothing, particularly children's nightwear has found no commercial favor. Legislation was passed by Congress four years ago empowering the United States Department of Commerce to set standards for flammability of garments. We are pleased to tell you today, that Commerce Secretary, Peter G. Peterson has announced that effective July 29, 1972 this law is to be implemented. As of that date, all nightwear, sizes 0-6X must be rendered flame-retardant or bear a label warning of its flammability and stating that it fails to meet the standards. It is hoped that this break-through will be rapidly expanded to include the clothing of larger children and other types of garments, at all ages.

Although these productive steps in the direction of prevention are encouraging, it is as unlikely that these measures will prevent all burns, any more than seat belts prevent traffic accidents. Ever improving techniques for managing the burned patient, reducing mortality, descreasing morbidity and eliminating deformity must be constantly sought.

The Last Thirty Years

The death rate for burn injuries in 1942 was 4 per 100,000 population. Although sophisticated techniques of resuscitating the patient have developed, although antibiotics have been developed against most known organisms, although techniques of skin grafting have become part of the armamentarium of most surgeons; the death rate from burns in 1972 remains at about 4 per 100,000 population.

Underhill at Yale University in 1923 observed the striking hemoconcentration which occurs with thermal injury, a demonstration forming the basis for fluid resuscitation. However, it was not until the Coconut Grove fire in 1942 that the importance of fluid replacement received its proper clinical application. The formulae for replacement fluids have evolved from the Harkins formula of 1942 (primarily whole blood), through the Evans formula of 1950 (one half colloid; one half electrolyte solution), to the most popular Brooke formula using one-quarter colloid and three-fourths electrolyte solutions. The last 10 years have seen the demonstration by Baxter that the sodium ion itself is the key to replacement and that successful resuscitation is possible with electrolyte solution only.[1] This emphasis on resuscitation now prevents most people from dying in the early shock phase after burning. However, the death rate remains the same.

By 1945, fewer patients succumbed to shock as adequate fluids were provided. They lived through this phase only to die a few days later from sepsis, usually streptococcal septicemia. A normal skin inhabitant, that flourishes in the weeping edematous fresh burn, *B-hemolytic Stereptococcus* can rapidly invade the burned tissues. Penicillin, introduced in the early 1940's largely prevented this complication and its use early in the fresh burn remains appro-

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priate today. It's use, however also did not lower the death rate.

Instead, by the early 1950's the patients now adequately resuscitated, and protected against streptococcus by penicillin, survived longer—long enough to be invaded by and succumb to penicillin-resistant *Staphylococcus aureus.* Again pharmacologic manipulation was successful and the penicillinase-resistant antibiotics were introduced and were rapidly incorporated into the treatment of all burn patients.

As broad-spectrum antibiotic coverage became routine, a new and more dangerous form of burn wound sepsis appeared during the decade of the 60's. Systemic antibiotics were very effective against the aerobic gram positive organisms who by their nature required a good blood supply, allowing the antibiotic to be delivered to them. Their control, however, set the stage for overgrowth by more saprophytic and previously relatively non-pathogenic organisms, such as *Pseudomonas aeruginosa.* Thriving in an avascular burn wound, isolated from the blood supply which carries the antibiotics, Pseudomonas first colonizes in the hair follicles. As quantitative growth exceeds 10^5 bacteria per gram, organisms spread into the wound.[2] A thrombogenic by-product renders the remaining wound avascular, destroying any viable dermal elements and turning the burn into a full-thickness injury. As bacterial counts reach 10^8-10^9 organisms per gram of tissue endo and exotoxins spill into the blood stream producing the picture of gram negative sepsis with shock and death. The clinical course is deceptive by its sudden turn for the worse and the failure to identify organisms in the blood stream or visceral organs. It is entirely a toxic death. Although effective *in-vitro* systemic antibiotics against Pseudomonas were available, the bacterial location in avascular areas made delivery through the blood stream ineffective.

Efforts meaningfully turned toward possible topical agents which could be applied directly to the wound to prevent sepsis. Any acceptable agent should be non-toxic to local tissue or systemically if absorbed, have a wide bacterial spectrum, be easy to use, non-irritating or painful, nonallergenic and hopefully inexpensive. Although hundreds of drugs were tried experimentally and dozens clinically, only several recived widespread acceptance.

The first was the use of dilute (0.5%) silver nitrate solutions applied as a continuous wet compress. Indiscriminately bactericidal and fungicidal, silver nitrate proved to be exceedingly effective in the prevention of burn sepsis but lacking in its ability to control already established sepsis. Mechanically it was difficult to use. Too rapid evaporation resulted in high silver concentrations which are toxic to normal epithelium; delayed evaporation (such as by wrapping dressing in plastic) resulted in very dilute solutions, as the silver precipitated, which were no longer bacteriostatic. Other problems included staining of linen, floors, walls and personnel. So too, the dilute solution leeched electrolytes from the wound making replacement and maintenance of plasma values a critical problem.

The second agent, now commerically available, was Sulfamylon® (Winthrop) a sulfa derivative as the acetate salt in a water-soluble carrier. Its use is technically easy—requiring only that it be applied to the surface of the wound each day, after washing off previous applications. It remains very effective against *Psuedomonas aeruginosa.* It also is not without its problems which include the sensation of pain on application and allergenicity of 10-15% in most series. It also is absorbed and, since its by-products act as carbonic anhydrase inhibitors, it will produce a metabolic acidosis. In many areas of the body its use is also difficult since its bacterial effectiveness is inexplicably reduced when it is wrapped in a dressing, requiring that an open technique be employed.

Other agents included topical gentamicin (Garamycin®—Schering) as an ointment or cream. Unavailable in bulk, its use was technically difficult. It is non-toxic non-allergenic and painless. It can also be neatly incorporated into a dressing. However, its widespread use has resulted in an increasing incidence of resistant Pseudomonas strains. Other agents including Furacin® (Eaton), Xeroform® (Cheeseborough-Ponds) and scarlet red were all acceptable agents for use in smaller burns, but not as effective anti-pseudomonas agents.

The year 1972 records the effectiveness of these measures in controlling Pseudomonas sepsis. Again however, the success has not been reflected in improved survival, only more prolonged survival. There has been an emergence of other gram-negative organisms as secondary opportunists and a litany of exotic new bacteria is being heard; mima, herrelea, *Providencia stuartii,* and the fungi, particularly *Candida albicans.*

In an effort to combine the best aspects of the broad spectrum of the silver ion with the ease of application of sulfamylon, the most promising new agent is silver sulfadiazine (Silvadene®—Marion). Available as a 1% concentration in a water-soluble base it is non-painful, non-toxic, essentially nonallergenic thus far. Effective when incorporated into a dressing it has a very broad spectrum including the gram-negative organisms and fungi. It is available only for clinical investigation at the present time but is the most exciting of the new agents. Other promising agents, also deserving of trial, include silver lactate-allantoin burn cream (investigational) and Betadine® ointment (Purdue-Frederick).

These agents have all been measured by their ability to control bacterial growth rather than eliminate it. Careful quantitative studies indicate that even the healthy burn wound is rarely sterile. Rather it is a level of bacterial growth below 10^5 bacteria per gram of tissue which is indicative of good bacterial control and a wound suitable for accepting a skin graft.[3]

Wound Management

The use of proper fluid replacement and maintenance, and this evolving armamentarium of topical antibacterial agents, has allowed the burned patient to survive to the time of eschar separation. From this time, until final wound closure is obtained with skin grafts, the burn problem becomes one of managing a nonuniform wound. In areas of adherent eschar the bacterial contamination may be quite significant whereas in areas of healthy granulation tissue the bacterial population may be of no significance. Teplitz, et. al. have shown that burn wound sepsis does not occur if the bacterial count remains below a critical number.[2] Similarly, Krizek, et. al. have demonstrated that skin graft survival is correlated more than to any other measurable factor, the number of bacteria present.[3] In a series of 50 patients who underwent skin grafting when their wounds appeared healthy by standard clinical criteria they found that grafts proceeded to healing in 94% of the cases if the wound contained 10^5 or fewer organisms per gram of tissue at the time of grafting. Conversely, in those wounds containing greater than 10^5 organisms per gram of tissue, the graft survival was less than 20%.

Because the number of bacteria present in the burn wound is related both to invasive sepsis and to skin graft survival; it appears that bacterial quantification is an excellent way of following a nonuniform wound as one prepares for closure by skin autografts. Both Teplitz's and Krizek's works were based on retrospective formal colony counting. This method, requiring 36-48 hours, is not practical as a method for following day-to-day changes in the burn wound. Therefore, Heggers, et. al. developed a rapid slide technique to allow bacterial quantification to become a useful prognostic clinical total.[4]

The technique for rapid bacterial quantification is to aseptically remove a piece of tissue from the wound. This can be done sharply with scalpel or with a dermal punch. Multiple biopsies may be taken from massive wounds if the areas are totally nonuniform. The specimen is weighed in grams and diluted 1:10 with Thioglycollate (1cc/gm). The tissue and diluent are then homogenized. Using a 20 lamba Sahli pipette, exactly 0.02 ml. of the homogenized suspension is transferred to a glass slide. The inoculum is kept in an area 15 mm. in diameter to aid in proper thickness of the smear. Next the slide is oven-dried for 15 minutes at 75 centrigrade.

After removing the slide, it is stained using either a gram stain or the Brown and Brenn modification of the gram staining method for bacteria in tissue.[5] The latter helps to accentuate the gram-negative organisms in tissue which tend to be eosinophilic with standard gram stain. The smear is then read under the microscope using a 1.8 mm. (97X) objective. All fields are scanned. The presence of a single bacteria has been correlated with a bacterial count in the original tissue of greater than 10^5 organisms per gram. Heggers, et. al. originally reported a 98.2% accuracy of this technique in 720 cases when compared to standard colony counting. Since that report we have used this technique over 2500 times maintaining a greater than 95% accuracy. It does not require specific professional skills and can be accomplished in less than an hour by laboratory technicians.

In addition to the problem of bacterial contamination in the wound, other problems exist in the nonuniform massive wound prior to grafting. One of these is protein loss. This has been estimated by Nylen and Wallenius to be as much a 2-3 grams/24 hours/percent open wound surface.[6] Another problem is one of sheer arithmetic. It has been estimated that 6,000 square centimeters of skin are required to resurface a 50% full-thickness burn in an adult. In some patients the burn area may indeed be greater than the skin area in available donor sites.

Biologic Dressings

All of the problems presented by the tenacious eschar, areas of granulating tissue, and nonuniformity of the wound can be managed by temporary biological dressings. They can obtain a closed wound, thus decreasing pain and heat loss from the wound. They can control the bacterial population. They can decrease protein loss. In addition, they can help solve the arithmetical problem of lack of donor sites by serving as wound closure until the donor sites can be reharvested.

Newer benefits of temporary biological dressings have been their use as a prognosticator as to wound readiness for autografting and their use as agents to decrease bacterial counts to less than the critical number necessary for successful grafting. Zaroff, et. al. described the homograft or allograft test to predict graft survival.[7] Using frequently changed allografts, they showed that an initial allograft take predicted autograft success in over 95% of cases. Robson and Krizek showed that the basis of this successful prediction was that allografts showed an initial take only on beds containing 10^5 or fewer organisms per gram.[8]

The actual decrease of bacteria in beds treated with biological dressing has been most useful. In the nonuniform wound, this allows treatment of healthy sparsely contaminated granulation tissue with autografts while the more heavily contaminant areas are being treated with biological dressings. As the bacterial counts decrease, the biological dressings can be replaced by autografts.

It appears as if biological dressings have solved the problems associated with the nonuniform burn wound during the time of eschar separation. The types of biological dressings presently available are cadaver allograft, fresh and lypholized porcine Xenograft and amniotic membranes. Because of lack of ready availability and the cost of the allograft and xenograft skin, we are investigating amniotic membranes. They have proved to be equal to other biological dressings at decreasing bacterial counts.[9] They are readily available, come in large sizes, and do not add to the overwhelming cost of the burn patient's care.

Preparation and storage of the amniotic membranes are quite simple. With their use the nonuniform wound can be segmentally and sequentially autografted with available skin while remaining areas progress under control to the stage of autografting. Once total wound closure has been obtained with autografts, the physical therapist, occupational therapist and social worker can complete the patient's rehabilitation to society.

Physical Therapy

Local wound care begins immediately after admission, with removal of foreign and necrotic matter from the wound surface. The institution of hydrotherapy and debridement is begun by the third to fifth day post-burn, at which point the patient is usually safely out of burn shock. Treatment prescribed at this time should include: hydrotherapy, debridement and dressings, range of motion, and splinting if necessary.

Attempts must be made to reduce the stress to which the burn patient is subjected during hydrotherapy treatment. The local wound represents an extensive potential source of thermoregulatory stress, particularly when exposed to the air following tubbing. The room should be kept warm, up to 86 F., with the doors closed and fans off. This will minimize insensible fluid loss and facilitate temperature regulation. Water temperature should be kept within the range of 98°-101°F. The length of time the patient is exposed to hydrotherapy is dependent upon specific criteria, such as: extent of the wound, the amount of stress which can be tolerated, the extent to which the water is equilibrated for electrolytes, and the time necessary to adequately treat the patient. Addition of NaCl to water for tubbing is generally adequate in the management of electrolytes, as sodium is the ion whose imbalance is most seriously affected.

A suitable way to decrease some of the discomfort is to soak off the innermost layer of dressings. In the early stages when eschar is present, mechanical debridement is desirable. However, when most eschar has been removed and the granulation bed is exposed, the potential injury to this neovascular structure may negate the advantages of mechanically debriding.

The softening of the eschar not only facilitates debridement but also encourages greater motion. Vigorous exercise should be done while the eschar is softened, permitting greater range with less discomfort. At this point topical medication is thoroughly removed and debridement initiated. Gauze, forceps and scissors are utilized to trim away all eschar, exudate and other foreign tissue which not only delays healing but also serves as a rich pabulum for bacterial colonization. Debridement can be aggressive up to the point of bleeding, at which point viable tissue is being sacrified and debridement should be curtailed. Debridement should be done daily until all necrotic matter is removed and a healthy, granulating bed is ready for grafting or spontaneous healing has occurred.

Splints are used in conjunction with a dressing to maintain optimal position. Maximum extension is the position generally used. An exception to this is the positioning of the metacarpal-phalangeal joints of the hand in 45 or more degrees of flexion. Splints which can be applied over dressings and which are removable for functional activities enable the patient to gain a higher level of functional independence. This is particularly rewarding in the hands, where moderately good function can provide a tremendous amount of independence for the individual.

Long range problems such as hypertrophic scarring, abrasive ulceration, scar maturation and contracture are evident to the rehabilitation and surgical reconstructive team, but are seldom meaningful to the patient. The patient must be educated in the importance of extensive and prolonged follow-up care. Splinting and exercise generally need to be continued until scar maturation is complete and there is no continued threat to loss of motion. Splinting is particularly important when the healed wound is on the flexor side of a joint, anywhere on the hand, or the neck. Another advantage of splinting has been suggested by Larson.[10] Following wound healing, the application of Orthoplast® (Johnson and Johnson) splints worn in conjunction with an ace bandage will markedly reduce hypervascularization, soften scar tissue and flatten hypertrophic areas. Continuation of use to the point of scar maturation will provide a more functional, more cosmetically acceptable wound which may not need further reconstructive surgery.

In summary, the exciting events in burn care in 1972 include:

1) The implementation of legislation to make flame-retardant clothing available to our children.

2) The changing spectrum of bacterial burn sepsis and the introduction of silver sulfadiazine.

3) The identification of the importance of bacterial quantification in determining the success of local wound care and for predicting the acceptance of skin grafts.

4) The use of biologic membranes, particularly amniotic membranes, for preparing the wound for definitive grafting.

5) The enlarging role of paramedical personnel in burn care—particularly the physical therapist. Evidence is increasing that splinting and pressure will preserve contour, maintaining motion and, indeed, prevent hypertrophic scarring.

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Role of The Surgeon In The Detection of Child Abuse

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Much attention has been paid in the past decade to the child abuse problem in the United States and elsewhere. Literature is becoming abundant, originating from legal, medical, social and judicial sources, pointing out the size and scope of the problem; that the problem is widespread cannot be doubted. This short presentation will emphasize the necessary high degree of suspicion that should be held by all surgeons treating trauma in childhood and the role which the surgeon can play in uncovering more of the cases of child abuse in each community.

The first significant paper to correlate what is now recognized as the classical picture of child abuse was described by Caffey[1] describing multiple fractures of the long bones associated with subdural hematoma. This was in 1946. This was followed in rapid succession by contributions by Silverman,[2] Wooley,[3] Kempe,[4] and Bryant,[5] pointing out the many features of the child abuse syndrome, expanding the spectrum from abuse through neglect to overt physical attack on the children. It was pointed out by Kempe, particularly, that the child abuse problem is not limited by social class or economic level. It is present in all elements of society, perhaps more difficult to detect among the more sophisticated, but need be suspect in every community or situation where trauma is treated, whether it be in the office or the emergency room. Perhaps the best way to emphasize the role of the surgeon in detecting and reporting child abuse would be to recount a recent patient from our own service who could well have gone undetected through a series of traumatic episodes had there not been a high degree of suspicion of those treating her. Even with the knowledge of the high risk child, it is quite evident that she continues to have problems.

Case Report

The case is that of R.R. who was born in June of 1968, child of a twenty year old unmarried black mother. The mother's parents had died. After a divorce she came from Mississippi to live alone in New Haven. The social situation has been poor from the start over the three years the child has been observed in our hospital. The record showed that she had multiple visits to the emergency room for various febrile illnesses and minor cuts, etc. The first major problem came on November 5, 1970 when she was admitted for burns of her lower legs. She was said to have "crawled into a tub full of hot water" when she was being taken care of by the mother's boyfriend in the mother's absence. These were partial thickness burns and required hospitalization for a secondary infection which developed. Investigation at this time by the suspicious nature of her injury brought out all the elements of neglect that contributed to this being an obvious case of child abuse. Social service workers and the protective agencies entered the scene and things seemed to be somewhat better until she was seen again about a month after discharge, having "fallen from a bed" and sustained a spiral fracture of the left humerus. Again an investigation showed poor supervision on the home-front and a desperate social situation. After a prolonged investigation and support from the mother she was returned to the home and seemed to be progressing well without any major difficulties until April 4, 1972 when she was admitted with abdominal distension, vomiting, failure to thrive, accompanied by a very distraught and anxious mother. Here again the investigations proved from the physical standpoint that the child had intestinal obstruction secondary to duodenal hematoma and traumatic pancreatitis.

The mother gave a history of "falling off a bicycle" four days earlier with progressive abdominal distension and bilious vomiting. Following admission she was treated with nasogastric decompression and improved without surgical intervention. After further social service investigation she was discharged with increased surveillance of the home situation by visiting nurses and counselling of the mother by the social service staff.

Discussion

This case is typical of the problems of detection and the frustrations involved with the management of the abused child. The DART program established at the Yale-New Haven Hospital several years ago contributed immeasurably to getting this child under surveillance.

The DART program is a medical center committee composed of two in-hospital pediatricians and a social worker who function to receive reports of any child who comes into the emergency room or is treated for suspicious illness or injury, where there is abnormal behavior on the part of the parents, where there is an implausible story backing up the nature of the injury, or where there are repeated visits for out of the ordinary ailments.

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Once the child is reported to the committee, even on the slightest suspicion of abuse, the problem is taken from the responsibility of the attending physician into the hands of the committee. The "D" stands for *detection,* a responsibility every individual has for looking out for the abused child. The second phase of the committee's work, that of "A" for *appraisal* is to evaluate the situation, investigate the social scene, the circumstances of the accident or illness, and to determine whether this child is indeed a subject of abuse. The "R" stands for *referral* and this referral of the family to the proper welfare agency or protective agency for prevention of further catastrophies, and finally "T" is for *treatment* of the abuse, restoration to health and to return to whatever home environment is deemed advisable by the agencies involved. The statistics for the functioning of this unit are available and have helped in uncovering increasing numbers of children at risk.

The surgeon's role becomes more evident when one can recognize that in several large series studied, by far the greatest majority, upwards of 85% of the injuries, might be treated by people in the surgical specialties. The nature of the injuries range from bruises and welts in 72% of the children abused, abrasions and lacerations in 36%, fractures other than skull 10%, and the remainder spread between internal injury to the abdomen, brain injury, burns, etc. It is quite evident that the surgeon should play a major role in the detection of the abused child. Our records, though not complete in this regard, show the very small percentage of the abused children being detected by surgical reporting, indicating the need for a higher index of suspicion on the part of all those in the surgical persuasion.

There are other statistics which are most illuminating. Accidents are responsible for the highest mortality of all childhood afflictions. It has been shown statistically that 10% of accidents are related to child abuse. A further statistic reported by Kempe indicates that in his study of a sample of 749 cases collected from a nationwide survey, more than 10% of children died from their trauma and 15% were left with permanent brain damage seccondary to being battered.

All fifty states now have laws requiring the reporting of child abuse to the welfare agency or police. Connecticut has Public Act No. 216 which spells out the obligation of the physician suspecting child abuse, to report such to the welfare department or to the police. It spells out adequate protection against charges of invasion of privacy, etc. The law states very clearly that all those suspected of abuse should be reported for investigation, and such a report does not indicate accusation. The law goes on in great detail to point out the chain of events and the method of handling the children, including a seventy-two hour admission to the hospital at the discretion of the physician to investigate the child home situation during the acute illness.

Summary

Current and previous experience with child abuse mandates that the surgeon have a vital role in its detection. Surgeons who treat injured children are obliged to report any child suspected of being abused and must recognize that child abuse is prevalent among all socio-economic classes. A registry of all children previously suspected of abuse is available on a twenty-four hour basis through the Welfare Department of the State of Connecticut to immediately confirm the suspicion of child abuse and initiate measures for conducting an appropriate investigation.

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Early Complications and Results of Fingertip Injuries

J. Upton, M.D. and S. V. Flagg, M.D.

Fingertip injuries are occurring with increasing frequency with the rising use of mechanical, industrial and household appliances. Several million cases occur annually making this the most common form of hand trauma. Although a fingertip injury may appear minor upon initial examination, lingering pain and loss of function of the hand often lead to a surprising amount of disability and a prolonged period of incapacity.[2-4,7,9,10]

The prime importance of the pulp of the finger is made all the more clear to us when we sustain such an injury. Moberg[8] stresses the function of the fingertip as an organ of sensibility and investigation and calls it the "third eye." A fingertip that lacks sensibility, that is without the cushioning of soft tissue or that is plagued by a tender scar or neuroma is a digit that cannot function as an integral part of the hand.

The goals of treatment must aim at providing, without unnecessary sacrifice of length, a durable well-padded covering in a pain-free, mobile digit with maximum sensibility in the shortest period of time.

Regardless of the initial form of treatment chosen, adherence to basic principles of early management is important in reducing morbidity. Conscientious attention to detail and adequate cleansing and debridement of devitalized tissue, conservation of length, immediate skin coverage to decrease edema and inflammatory response as well as early rehabilitation should be the hallmarks of treatment.[5]

The choice of relatively standard methods of treatment to provide the best result for a given patient should be determined by the type of injury, the level and plane of injury and the amount of tissue lost. The patient's age, associated medical diseases, the digit(s) and hand involved and personal desires also greatly influence the treatment plan. It is particularly important to relate the surgical repair to the patient's occupation.

A study of fingertip injuries was conducted at the Yale-New Haven Hospital over a seven month period from August 1971 through February 1972. Two hundred and nineteen fingertip injuries in 173 patients were investigated, almost a patient a day. The purpose of the study was to evaluate the incidence, complications and intermediate results associated with serious fingertip injuries in relation to the type of surgical treatment.

The minimum follow-up period was three months and the maximum seven months. Initial treatment was administered by twenty-four different surgical residents and by six different attending surgeons covering the fields of orthopedic, plastic and general surgery. One hundred and sixty patients were treated in the Emergency Room and 13 in the Operating Room. A total of 19 patients were admitted to the hospital for an average stay of 5.2 days.

Of the entire group of injuries, 87 were compensation and 86 were noncompensation, reflecting the high frequency of self-employed and non-occupational injuries. Males outnumbered females 143 to 30. Only five patients in the entire series were on welfare at the time of injury.

Approximately ninety percent of the patients were right handed. One hundred and twelve fingers injured were on the right hand and 107 on the left. The most frequently injured digit was the index finger followed by the long, thumb, ring, and small fingers respectively.

An injury was defined as one which occurred distal to the DIP flexion crease. Injuries extending proximal to this level were excluded from the study. The mechanisms of injury are summarized in Table 1. Thirty of the fifty-six patients with lacerations cut themselves with a knife. Five of the eight meat slicing injuries occurred in the same machine at a local cooking school. Doorjamb and machine press injuries accounted for the overwhelming majority of the crush injuries. Band and chain saws were the most common cause of crush/avulsion injuries. Five patients were treated for cold injuries. It should be noted that simple lacerations, simple contusions with subungual hematomas, closed frac-

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tures of the distal phalanx and simple nail avulsions were not included in the study.

Of the 107 patients who sustained either a crush or crush/avulsion injury, 72 had fractures. One third of the fractures were simple and two thirds were compound. Eleven of these fractures were intra-articular and 29 were comminuted.

Forty of the eighty-seven patients with industrial or compensation injuries were performing a familiar task which they had been specifically trained to do. Only eight or nine percent were doing unfamiliar work. Machine malfunction was reported to be the cause of accident in five of these injuries and failure of a safety device in one.

The type of treatment employed in the 219 fingers is illustrated in Table 2. It is noteworthy that thirty-eight or seventeen percent of the entire group required debridement and/or dressing only. These injuries consisted primarily of cold injuries, thermal burns, dog bites and a snake bite. Eighty-five or thirty-nine percent were treated with primary closure. Fourteen or six percent received split thickness skin grafts and fifty-nine or twenty-seven percent a full thickness skin graft. The majority of the latter consisted of reimplantation of skin brought in by the patient after careful cleansing, defatting and occasionally dekeratinizing. Only twenty-one or nine percent were closed with local flaps. Volar and oblique flaps were used whenever local tissue was available. Five V-Y advancements, four of the Kutler[6] variety and one Kleinert[5] volar advancement, were employed. Regional flaps were used in four patients.

TABLE 1

MECHANISM OF INJURY

Laceration		56 Patients
Knife	30	
Meat Slicer	8	
Glass	6	
Shearing Machine	3	
Other	9	
Crush		76
Doorjamb	45	
Machine Press	16	
Hammer, Sledge	4	
Roller	2	
Other	9	
Crush/Avulsion		31
Saw	14	
Fan Belt (car)	3	
Other	14	
Cold Injuries		5
Dog Bites		2
Burns, Thermal		2
Cottonmouth Rattlesnake Bite		1

TABLE 2

REPAIR

Debridement and/or Dressing only*		38 Fingers	17%
Primary Closure		85	39%
STSG		14	6%
FTSG		59	27%
a. Amputated Part	37		
b. Distant Donor	22		
Local Flaps		21	9%
a. Volar and Oblique	16		
b. V-Y Advancements	5		
Regional Flaps		4	2%
a. Cross Finger	3		
b. Thenar	1		
		219 Fingers	100%

* These consisted primarily of burns, dog bites, cold injuries and a snake bite.

Analysis of the ninety-eight fingers with subtotal amputation of composite tissue revealed that approximately two thirds occurred at the distal third. Eightly-five percent of this group were treated with a free skin graft. If bone was exposed, it was rongeured and the resultant defect covered with soft tissue to provide bulk. One fourth of the amputations occurred at the middle third and these were treated for the most part by grafts or local flaps. Three of the twenty-four fingers in this group were treated with regional flaps. Six of the eight amputations at the proximal third were closed with local flaps, one with a cross finger flap and one with a full thickness skin graft.

Complications occurred in twenty-three of 173 patients or 13.3 percent and in twenty-nine of 219 fingers for an identical percentage. The total of forty-seven complications is broken down in Table 3. More than one complication often occurred in the same digit. For example, a soft tissue infection which developed osteomyelitis counted as two complications. Nineteen of these complications consisted of either partial or complete graft or flap slough. Infection developed in fourteen fingers, totalling thirty percent of all complications. Hema-

TABLE 3

COMPLICATIONS*

Graft or Flap Slough	18	40 %
Infection	14	30 %
Hematoma/Seroma	8	17 %
Fracture not Diagnosed	2	4.5%
Osteomyelitis	2	4.5%
Tape Maceration	1	2 %
Digital Block Neuropraxia	1	2 %
	47	100 %

* More than one complication often occurred in the same Digit.

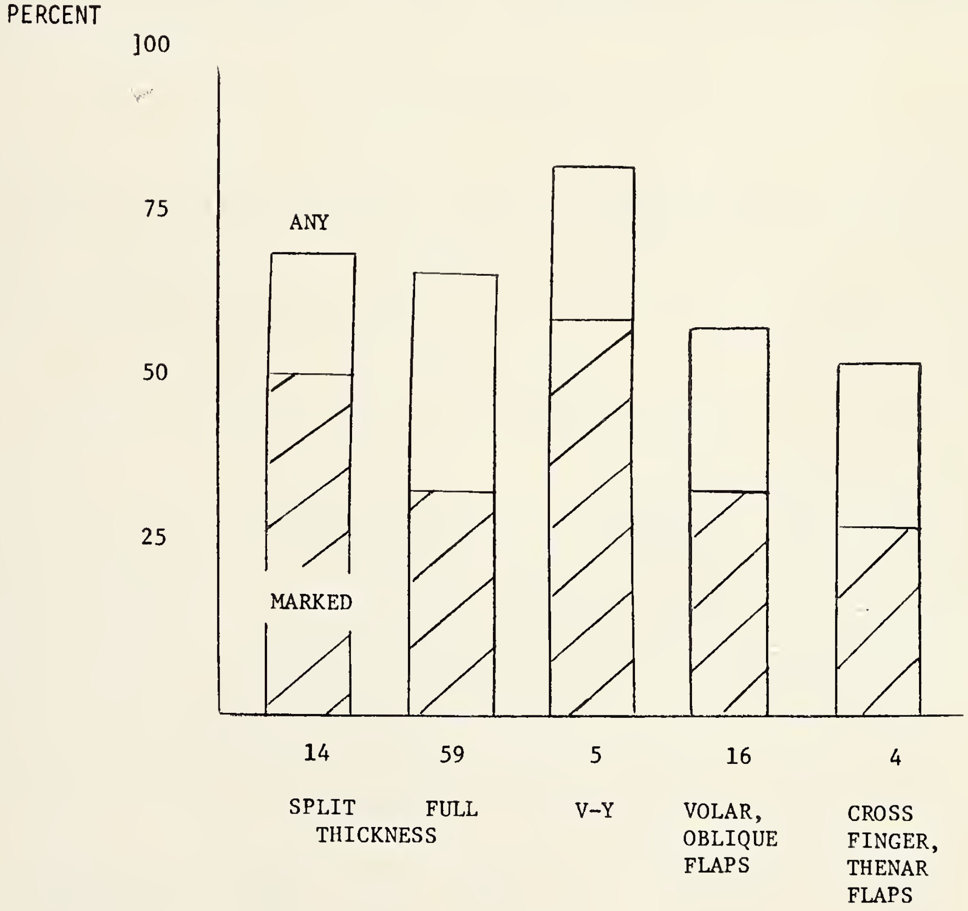
tomas and seromas were evacuated in eight fingers or seventeen percent. Two patients with infection developed draining osteomyelitis within six months. Two patients had fractures which were not initially recognized and reduced following crushing injuries.

The highest incidence and greatest number of complications occurred in the full thickness skin graft group. Several reasons were failure to completely defat the graft, reimplantation of crushed tissue and the increased time for "take" in a contaminated wound. This high graft failure rate with full thickness reimplantations emphasizes the importance of obtaining an accurate history and carefully examining loose tissue before reimplantation. The second highest complication rate in the V-Y advancement group represents one patient who had necrosis of a flap secondary to excessive sharp dissection. Split thickness skin grafts had the third highest complication rate. Inadequate immobilization and elevation of grafts and insufficient debridement of devitalized tissue were thought to be contributing factors in the failure of free grafts as well as the development of infection and the failure to evacuate hematomas and seromas.

The primary closure group had complications in eight percent. Causative factors here were inaccurate assessment of viable tissue, excessive tension of wound closure, interruption of blood supply by sutures and grossly contaminated wounds. The lack of complications in the local and regional flap groups may be related to the fact that these were repairs for the more proximal amputations which were performed in the operating room.

At a minimum follow-up period of three months the intermediate results of all ninety-eight fingers in the subtotal amputation group were correlated. Mild or marked tenderness was experienced by fifty to seventy-five percent of all patients regardless of the type of repair. Marked tenderness was found in all four of those patients treated with the Kutler

FIG. 1



PERCENTAGE OF PATIENTS IN THE SUBTOTAL AMPUTATION GROUP COMPLAINING OF TENDERNESS AT 3 MONTHS method of V-Y advancement. One patient with a Kleinert type volar advancement was pain free. Fifty percent of the patients with split thickness skin grafts complained of marked tenderness compared to thirty percent in the full thickness skin graft group. This difference may partly be explained by the fact that the split thickness grafts were in general utilized for the more severely injured or crushed digits where tip skin was either not available or too severely injured for adequate reimplantation. Several surgeons used split thickness skin grafts because of resultant increased wound contracture which brings in the surrounding skin with intact sensibility. Almost all of the patients examined at the six month interval demonstrated a marked decrease in their tenderness.

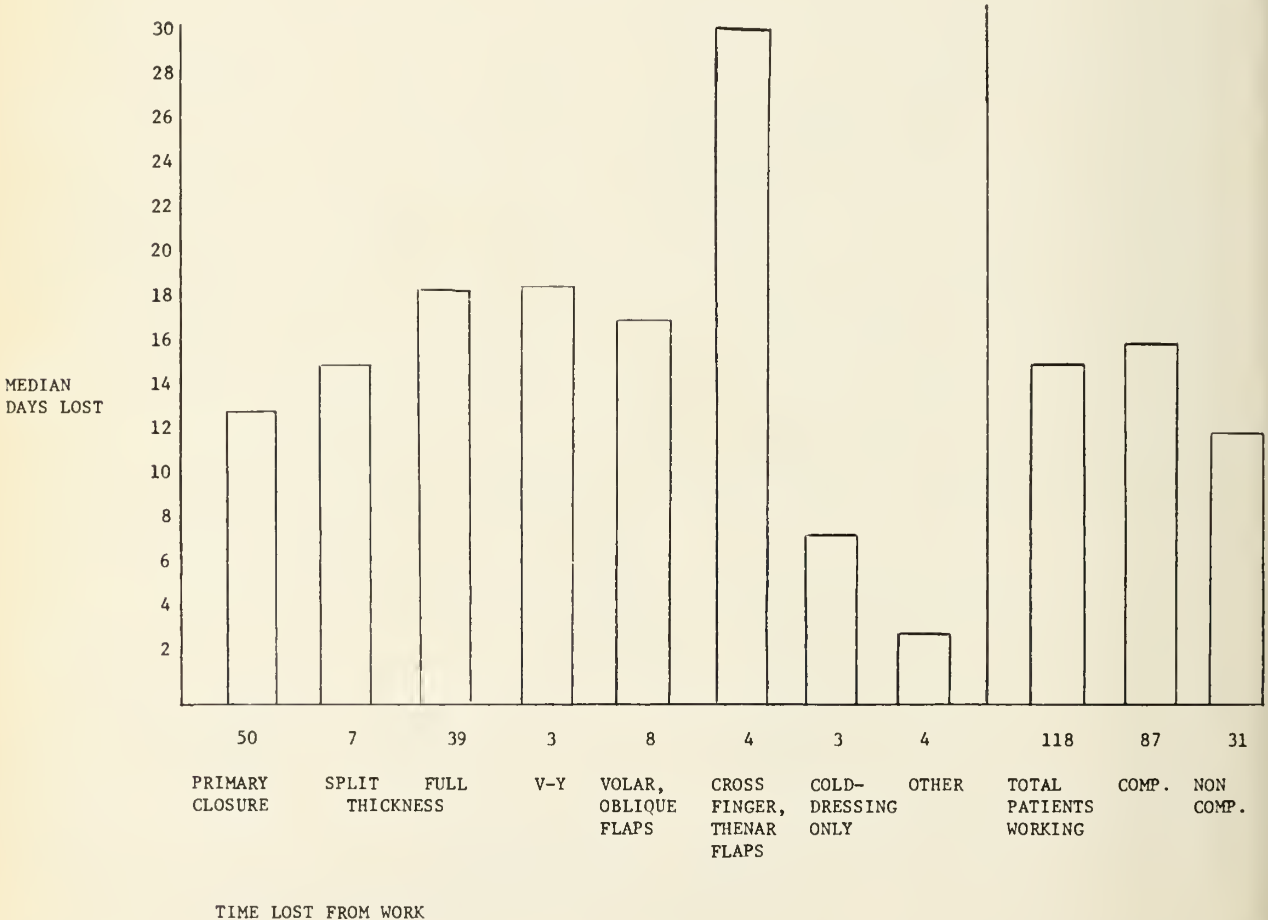
Because the greater portion of the study was conducted during the winter months, there was a high incidence of cold sensitivity. Almost half of all patients with subtotal amputations treated with skin grafts complained of cold intolerance. Three patients employed as carpenters were unable to work outdoors despite gloves and hand warmers. All the patients who sustained previous cold injuries had exquisite cold sensitivity at the three months interval.

Measurements of fine touch, two point discrimination, numbness and sudomotor activity using ninhydrin paper were performed but did not yield reliable results at three months.

Range of motion of the DIP joint was reduced in fourteen patients, ten of whom sustained intra-articular fractures. One of the four patients treated with a regional flap had joint stiffness and decreased range of motion. Marked nail deformities were present in sixteen patients. Five of these required nail revision because of paronychia by the fourth month.

The median time lost from work for the entire group of 118 working patients was 15.1 days, 16.0 days for compensation injuries and 12.3 days for non-compensation injuries. Many of the free skin graft patients returned to work in two weeks but the median of the entire group was higher due to complications. The rapid return to work noted in those patients with extensive injuries treated by

FIG. 2



local flaps, 17.2 days, reflects the benefit of primary wound healing in the working man. The relatively early return to work of all patients, especially those in the regional flap group, reflects the close cooperation between the physician, patient and employer in working out alternative work schedules. In addition, the financial burden of the Christmas holiday may have motivated many patients to return to work at full pay. Approximately sixty percent of all patients returned to work with a protective dressing doing a light task.

In conclusion, the incidence of extensive fingertip injuries at the Yale-New Haven Hospital over a seven month period averaged about one a day. Complications are not infrequent and in our series averaged thirteen percent of all patients treated. Intermediate results at three months post injury show at least fifty percent of patients complained of tenderness regardless of type of surgical repair. To reduce complications, disability, and incapacity, certain principles should be adhered to. A more rapid return to work can be effected with a motivated patient, a conducive health system, and cooperation between patient, employer and physician.

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Complications of Diagnostic and Therapeutic Cardiac Catheterization

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and H. C. Stansel, Jr., M.D.

Cardiac catheterization is an indispensable method for the evaluation and treatment of patients with heart disease. Generally, the procedures are of extremely low risk with few adverse effects. When difficulties arise, however, they often must be dealt with decisively. The purpose of the present communication is to discuss the more common complications that may occur as a result of cardiac catheterization and their management.

Table 1 groups the complications as to site. Introduction of the catheter of necessity involves violating of the integrity of the skin and carries a risk of introducing infectious agents either at the local site or into the heart. Fortunately, this is an extremely uncommon situation. The efficacy of prophylactic antibiotics is still somewhat controversial but they are used routinely in our laboratory. In addition, the percutaneous method of catheter insertion virtually eliminates infection at the site of entrance.

Perforation of a vein or artery is more likely in an infant or child, since the vessel walls are relatively thin. Transection of the common femoral

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vein is not an unusual situation in an infant during insertion of the large Rashkind balloon catheter. It is sometimes possible to retrieve the vessel. When the incision and catheter site of entry are above the crease as recommended, the retraction of vein cephalad may make ligation impossible. This is best dealt with by compression and wound tamponade with sutures. Significant bleeding has not been a major problem with this approach.

If a catheter is not blocked to the outside air, either with a stopcock or column of fluid, there is a potential risk of air embolism during a deep inspiration (i.e., crying in a child).

TABLE I

MAJOR COMPLICATIONS OF DIAGNOSTIC AND THERAPEUTIC CARDIAC CATHETERIZATION

- I. LOCAL (complications related to insertion and passage of catheters)
  - A. Infection
  - B. Perforation or Transection of a Vessel
  - C. Air Embolism
  - D. Knotting, Breakage, or Loss of Catheter
  - E. "Electrical"
  - F. Thrombosis
  - G. False Aneurysm
  - H. Arteriovenous Fistula
- II. CARDIAC
  - A. During Diagnostic Studies
    - 1. Perforation and laceration
    - 2. Lodgement of a foreign body
    - 3. Knots
    - 4. Air embolism
    - 5. Thrombi dislodgement (especially transseptal)
    - 6. Arrhythmias
    - 7. Myocardial infarction
    - 8. Endocarditis
    - 9. Laceration of a coronary artery (left ventircular puncture)
  - B. During Therapeutic Measures
    - 1. Rashkind (balloon septostomy)
      - a. Mitral or tricuspid valve avulsion
      - b. Perforation
      - c. Balloon rupture ± embolization
      - d. Tear of inferior vena cava
      - e. Inability to deflate ballon
    - 2. Pacemaker (perforation, electric shock)
    - 3. Neurosurgery (infection, loss of material)
- III. CEREBRAL
  - A. Seizure
    - 1. Xylocaine
    - 2. Hypertonicity
    - 3. Air
    - 4. Overtransfusion
  - B. Stroke
    - 1. Air
    - 2. Thrombus
- IV. ALLERGIC
- V. MISCELLANEOUS
  - A. Sickle Cell Crisis
  - B. Pulmonary Edema
  - C. Heparinization

Knotting, breaking of a catheter or guide wire, or loss of an introducer are extremely unfortunate situations that have been reported previously (Figure 1). Equipment should be inspected prior to insertion. In our laboratory, all guide wires and percutaneous catheters are used once, thereby decreasing the incidence of equipment fatigue. In addition, all materials inserted should be radiopaque. Prior to the availability of radiopaque dilators, we had the misfortune of having a dilator become lodged at the junction of the inferior vena cava and left common iliac vein (Figure 2). Since the dilator could not be visualized during fluoroscopy, it was impossible to snare it with either the Dotter or Curry retrieval systems or withdraw it using a Fogarty embolectomy catheter. It was successfully removed at operation.

The dangers of current leakages and inadequate ground systems are well known to individuals utilizing catheterization laboratories. It should be emphasized, however, that the guide wires and electrode catheters commonly used are potential hazards.

Thrombosis of an artery due to catheter insertion or manipulation is said to occur in approximately 10% of the patients catheterized via an arteriotomy and approximately 1 to 2% of those approached percutaneously. The factors that most influence thrombosis are the length of the procedure, the amount of manipulation, and the catheter material. Teflon is probably the least thrombogenic material commonly used, while polyurethane is the most thrombogenic with the other materials falling between these two.

In our experience, 300 infants and children have undergone percutaneous left-heart study in the last 12 months with only one diminution in pulse for more than 24 hours. This was a seven-month-old infant in whom the pulse returned to normal within three days. The excellent results are felt attributable to the lack of catheter manipulation (the wire is manipulated instead), the continuous flushing of the catheters with heparinized solution (2500 units of heparin in 500 cc's D_5W), and the relatively short duration of the studies (most less than two hours).[1]

When an absent pulse is present at the end of a procedure performed via arteriotomy, immediate embolectomy should be undertaken. A diminished pulse may be observed for several hours. If im-

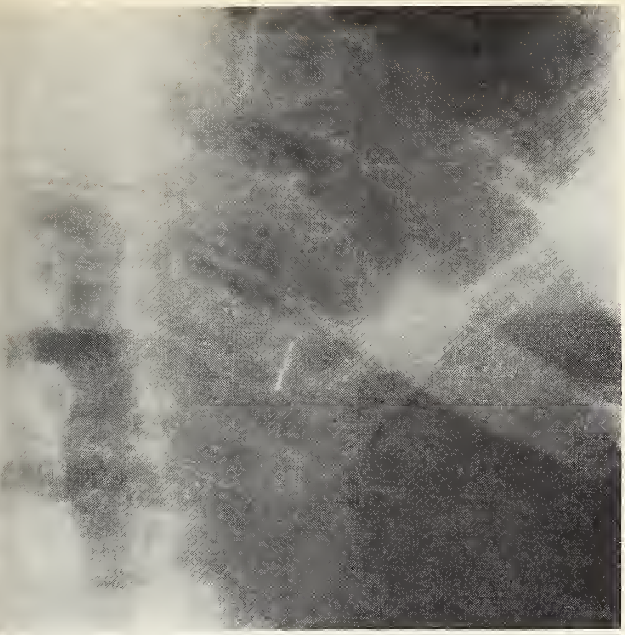

Figure 1
Broken tip of a stainless steel guide wire is noted lodged within the right subclavian artery.

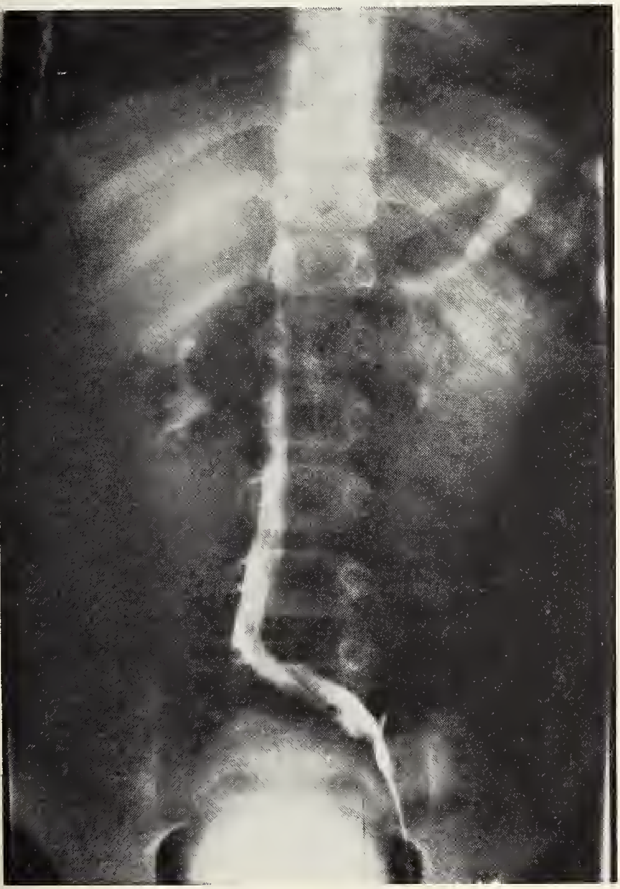

Figure 2
The venous angiogram demonstrates an area of lucency within the iliac vein. This was the lost dilator confirmed at operation.

provement does not occur, embolectomy is required.

Most false aneurysms are recognized when either resistance is met during passage of the catheter or because of pain that is experienced by the patient. Occasionally, the dissection is discovered only after injection of contrast material. Obviously, no catheter, either venous or arterial, should be advanced if resistance is encountered or the position appears abnormal. In many older patients with atheromatous plaques and extremely tortuous vessels, the use of a "J" shaped guide wire will avoid dissection. Most false aneurysms are managed by careful observance. Rarely is operative intervention necessary.

Local aneurysms and arteriovenous fistulas fortunately are uncommon. When they occur, they should be resected.

Probably the most potentially serious complication is perforation of the heart or aortic arch during either manipulation or injection of contrast material (Figure 3). This is recognized by either the abnormal position of the catheter, failure to withdraw blood, a change in the pressure tracing, or by the cautious injection of a small amount of contrast material. According to Miller, "If a 5 French or smaller catheter penetrates the aortic arch, a needle may be placed in the pericardial space, after which the catheter can be withdrawn back into the aorta to monitor pressure. If the cardiac silhouette enlarges or the pressure drops, blood is withdrawn from the pericardial sac and returned intravenously. The process is continued until fluid stops accumulating and the pressure is

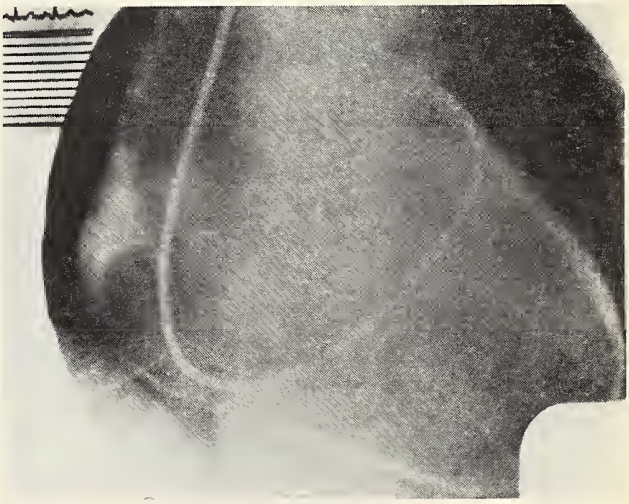

Figure 3
Cineangiogram frame demonstrating contrast material within the pericardial space. The catheter position is too lateral suggesting perforation of the right ventricular outflow tract. This was repaired at operation.

stable."[2] If the catheter is a 6 French or larger, it should be left in place and provisions made for closing the perforation at thoracotomy. Tamponade may be avoided by withdrawing blood through the offending catheter. This allows the completion of the study, if necessary, so that the intracardiac abnormality may also be corrected at operation. The most common sites of perforation are the right ventricular outflow tract, the left atrial appendage, and less commonly the coronary sinus.

The dislodgement of pre-existing thrombi within the heart obviously may occur. This is particularly relevant in patients undergoing transseptal left atrial catheterization. The presence of calcium either on the plain X-ray or at fluoroscopy is a contraindication to pass a catheter into the left atrium. In selected instances, the transseptal needle may be utilized to obtain a pressure.

Tamponade may occur following left ventricular puncture. This was more commonly seen previously when angiograms were often performed in this manner. However, they may also be secondary to laceration of a coronary artery or vein. Management of the pericardial blood is dependent upon symptoms, but usually is self-limiting, occasionally requires pericardiocentesis, and rarely thoracotomy.

A myocardial infarction during catheterization may be secondary to injection of contrast material, embolization of thrombi that have formed on the catheter during manipulation, or the inadvertent injection of air. It may also result from the prolonged total occlusion of a coronary orifice by a catheter. Some laboratories prefer continuous infusion of heparinized solutions to avoid the thrombus problem, while others believe intermittent infusion is adequate. Probably the largest factor influencing the complication rate is the length of the study. The management is that of any patient who has undergone an infarct. Arrhythmias should be dealt with rapidly. Laceration of a coronary artery may rarely be the precipitating event and should be kept in mind as this is theoretically amenable to surgery.

While a catheterization is usually diagnostic, it may also be therapeutic. Pacemakers obviously have the potential risk of both perforation and electrical difficulties. Most perforations take place over a period of time and, therefore, scarring is generally present. Recognition occurs when a failure to pace is seen.

The Rashkind balloon septostomy catheter, while revolutioning the management of infants with transposition of the great arteries and some with total anomalous pulmonary venous return, does have serious potential complications.[3] These have included avulsion of the papillary muscles of both the tricuspid and mitral valves (Figures 4 and 5), perforation of the atrium, rupture of the balloon with embolization of fragments to the brain, tearing of

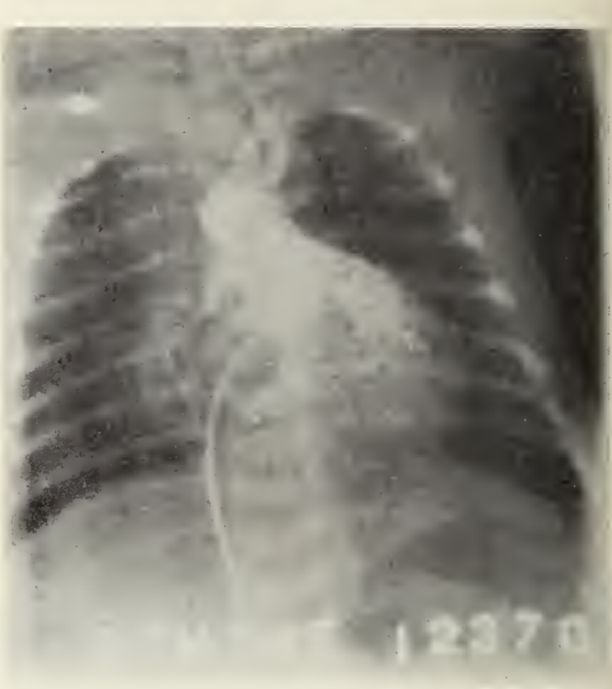

Figure 4
Right ventricular angiogram prior to balloon septostomy demonstrates aortic filling and no tricuspid insufficiency.

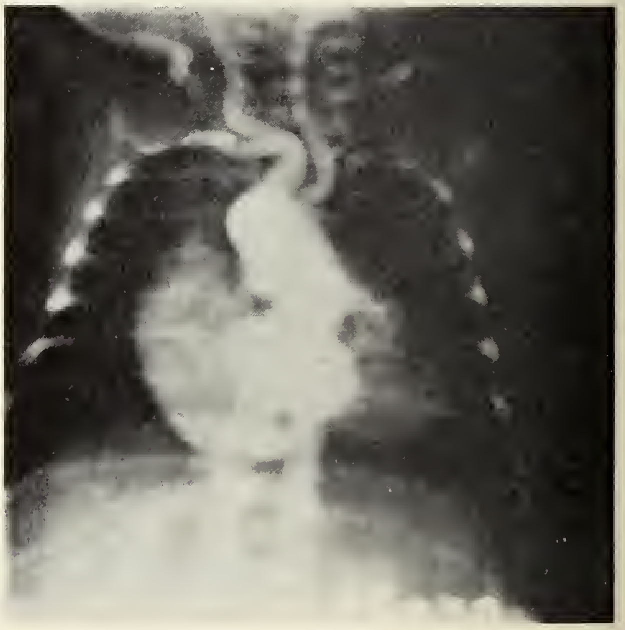

Figure 5
Post Rashkind balloon septostomy angiogram demonstrates severe tricuspid insufficiency. At operation a papillary muscle had been avulsed.

the inferior vena cava, and an inability to deflate the balloon.

These difficulties are avoidable by proper catheter position verification. This may be accomplished by sampling from a pulmonary vein, measuring the pressure, injecting contrast material, or lateral fluoroscopy. The improved catheter balloon fastenings and tougher rubber now available should eliminate embolization. If the balloon will not deflate, a guide wire may be passed to the inferior vena cava and the balloon catheter pulled down sharply onto the wire thereby rupturing the balloon.

The cerebral complications observed are generally iatrogenic. They may be caused by the misuse of various drugs such as xylocaine, by the overtransfusion of hypotonic flushing solution in an infant, the overuse of hypertonic contrast agents (a limit of 4 cc per kg of body weight for the total study and 1.5 cc per kg per left-sided injection should be observed), or the inadvertent injection of air. These all are preventable with proper caution.

In summary, although cardiac catheterization is a necessary procedure, all who are connected with a cardiac unit should be aware of the potential complications. While most situations may be handled conservatively with medical management, prompt surgical aid must be available. The common complications are discussed along with their management.

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An Osler Anecdote

Osler was a medical consultant in World War I and on one occasion he was presented with an obscure condition in a veteran of the South African Campaign. He sat listening to the history in long detail with his eyes moving around. When it ended, he was silent for a moment. Then he leaned forward and looked at the tattooing on the man's forearm.

I often think, he said casually, that if I look closely enough at those tattooings I can see the track of the spirochete. Indeed it has been said that if the South African Medal ribbon were soaked in water the solution would give a positive Wasserman reaction.—H. E. MacDermot. Can. Med. Assoc. J., 105: 1129, December 4, 1971.

Connecticut Medicine

Editorials

LOUIS H. NAHUM, M.D.
Editor
1958-1972

Since 1958, this Editorial page has been the first section read by many of us. Elsewhere in this Memorial Issue, proper and more complete tribute will be given to Dr. Louis Nahum's extraordinary career and his enormous contribution to graduate medical education.

Although Dr. Nahum's courtesy, courtliness and personal qualities will be sorely missed, we are privileged to be able to publish in the next months, additional editorials that were written during his recent illness.

The Editorial Board

"O Death the Healer, scorn them not, I pray
To come to me: of tireless ills thou art
***The one physician."*–Aeschylus (Fr. 229)**

Our New Medical Graduates

June is the traditional month of graduation, but this past June has very special significance to the medical profession in Connecticut, the graduation of the First Graduating Class of the University of Connecticut School of Medicine. We salute them and congratulate their faculty.

We should all, however, recall the words of Paracelsus who wrote "Knowledge makes the physician, not the name or the school". I am certain that our new colleagues will quickly be aware of a saying from Confucius who wrote that "Learning without thinking is useless. Thinking without learning is dangerous". We hope too that the faculty of our new school will recall a particular writing of Theodor Billroth, "The future of a school is based on the work of the pupils as is the future of a country on the work of its citizens". Based upon the work demonstrated by this year's graduating class, the future of the University of Connecticut School of Medicine is secure.—W.F.E., Jr.

Back To The Bedside: Diagnosing Carotid Artery Stenosis

Strokes account for about 200,000 deaths each year in this country. A fair proportion of these strokes—20 to 40 percent— could be treated or prevented, for they result from occlusive lesions of the extra-cranial cerebral arteries. Many of these are due to stenosis or occlusion of the carotid arteries whose symptoms and signs are easily recognizable. Because of the collateral arrangement for cerebral blood flow (circle of Willis) extracranial (anastomotic pathways) even severe stenosis of one or both internal carotid arteries may not affect blood flow unless there is a drop in systemic blood pressure.

Temporary episodes of hypotension then expose underlying pathology. They produce transient decreases in cerebral blood flow which in turn cause the hallmark of carotid artery occlusion—the well known transient ischemic attacks (TIA). Usually the blood pressure returns to normotensive levels promptly and in consequence the symptoms are short-lived, usually ending within minutes or slightly longer. By contrast, intracerebral vascular accidents, cause more profound and much longer-lasting changes. Of these are two characteristic symptoms associated with stenosis of the carotid artery. One is related to the area of the brain most affected by the resulting ischemia. The other originates in the eye since the ophthalmic artery is the first major branch of the internal carotid artery inside the head and supplies blood to the eye. Insufficiency of flow of blood in the carotid often reduces the blood supply to the eye on the same side and causes transient loss of vision in that eye.

The cerebral symptoms that occur with carotid artery stenosis during hypotension depend obviously on what area of the brain suffers temporary insufficiency of blood. If the entire system is involved, the patient may suffer a sudden onset of weakness or complete paralysis on the opposite side of the body. The patient may feel this as a numbness or "deadness" of the face, arm, hand, and leg. Usually this impresses him more than the fact that he cannot move these parts.

The paralysis or weakness may be accompanied by an actual decrease in sensation, detected if he touches the affected part of the body with the normal hand. Control of one side of the mouth produces slurred speech if he tries to talk during the few minutes of the attack. In right-handed people intermittent insufficiency of the left carotid artery produces disturbances in formulating and understanding speech. This insufficiency also produces forgetfulness as well as actual confusion.

The visual changes can be striking. The objects on the opposite side of the involved carotid artery may not be seen at all if the patient looks straight ahead. The second point is that vision on the same side as the involved artery may also be affected. All those phenomena together, cerebral and ophthalmic, make up what might be called a full blown attack of intermittent insufficiency of the carotid artery. Such attacks should raise our index of suspicion and call for a thorough examination for the existence of carotid artery stenosis.

Atheromatous deposits tend to concentrate in areas of branching or bifurcation. No one knows exactly why this happens but some suggest that the reasons include increased turbulence and changes in flow patterns at these branching points. Whatever the underlying mechanisms, the carotid bifurcation in the neck is an area where atheromatous stenosis can be severe. At the same time it is generally segmental. It is in a region quite accessible for a meticulous physical examination.

A bruit over the carotid artery is a very helpful clue and does occur in a great many patients with carotid stenosis. It will, however, not be heard if the artery is totally occluded. Such a bruit may be transmitted from a stenotic aortic valve, however, and this differentiation is necessary. In this case, the transmitted sound from the aortic valve is more likely to be bilateral and heard over both carotids. This transmitted bruit is also less of a "buzzing" sound that one hears over a stenotic carotid vessel.

There are also some helpful additional tests. If one compresses the carotid, one can determine the patient's tolerance to decreased unilateral carotid flow. The compression is applied to the artery below the bifurcation to avoid involving the carotid sinus. The pressure is maintained for at least 10 seconds or to the point of tolerance while observing any effects on the patient. If the reaction is positive the patient will reproduce some of his neurological symptoms. Naturally, in case of severe intolerance the carotid pressure should be reduced immediately. Finally, is the palpation of both carotid, superficial temporal and radial pulses which may bring out subtle differences between the two sides.

The opthalmologist can be an aid in diagnosis since he can see retinal vessel pulsations and measure by opthalmodynamometry the pressure in the retinal arteries. When skillfully performed this test confirms presence of carotid stenosis and provides a basis for assessing response to treatment. Plain X-ray films of the neck may show calcific deposits at the carotid bifurcation. Arteriography is the last and most definitive tests to positively confirm and locate the stenosis as well as to evaluate the status of the proximal and distal vessels.

When the obstruction is confined to a short segment as is usually the case in the carotid arteries, the obstructing material can be simply removed by endarterectomy. Rainer and Sadler[1] were able in 315 cases to perform endarterectomy with primary closure in 90 percent of their cases with only 2 operative deaths and 8 hospital deaths, a total of 3 out of a hundred.

Clearly carotid reconstructive surgery can be done successfully and safely enough to make it worthwhile in all patients with significant carotid stenosis. If the stenosis is diagnosed early, the operation can greatly reduce the incidence of future or disabling strokes. We should continue to collect material so as to compare the longevity and function of those with and without endarterectomy.—L.H.N.

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New Knowledge About The Hepatitis Virus

During the past few months three different laboratories independently announced that they have successfully transmitted serum hepatitis to non-human primates. This is the first demonstration in which the suspected viral agent has been successfully transmitted to an animal model and thus represents the first step toward the eventual development of a hepatitis vaccine. It has taken 5 years of intensive research to reach this point which allows a relatively broad understanding of at least the form of hepatitis known as serum hepatitis HB.

Physicians have long recognized 2 distinct types of infections. Infectious hepatitis HA is transmitted by fecal contamination of food and water and is responsible for 90 percent of the more than 74,000 cases reported every year. Hepatitis B or serum hepatitis is responsible for less than 10 percent of the reported cases and is considered the more dangerous form in part because those exposed to it are generally acutely ill. However this form is increasing in incidence as a result of its spread by drug addicts as well as by increased use of blood banks of paid donors. We shall see below that at least 14 percent of people harbor this particular virus in their blood stream.

Even now there is neither a specific clinical test for either virus nor a specific treatment. However, a major breakthrough occurred in 1964 when B. S. Blumberg observed a foreign substance initially called Australian antigen in the blood of an Australian aborigine. No clinical significance of this discovery was immediately apparent. However, this observation led gradually to recognition of several new particles which finally turned out to be a virus with a protein core and a recognition of its replication in the nucleus and cytoplasm of hepatocytes. During an attack of hepatitis an antibody is formed which then disappears but the immune response to the viral core persists.

Much is still unknown about the putative hepatitis virus. This lack of knowledge invites search for animal models. The key to characterization of a virus is to have an animal or tissue culture system in which the suspected virus can be grown, observed, characterized and manipulated. Until this year there has been no such system for hepatitis other than man. Now Purcell, et al of NIH have successfully infected 5 rhesus monkeys with hepatitis. The agent responsible for this infection has subsequently been transmitted serially through 4 additional groups of monkeys by the use of serum from one group to infect the next. Two chimpanzees have also been so infected. Both groups had similar symptoms transient viremia of antigen HBAg of 1 to 3 weeks duration occurring 8 to 13 weeks after inoculation and was followed by antigen developed against HBAg. None of these animals developed clinical symptoms of hepatitis but their responses resembled subclinical infection observed in man.

A similar experiment was carried out by Alfred Prince who infected 5 chimpanzees with serum for a chronic hepatitis carrier. He observed long term rather than transient antigenicity beginning 3 to 4 months after inoculation. A third group from FDA infected 2 chimpanzees with hepatitis, then in turn transmitted the successful agent to 2 more. A fifth chimpanzee was also infected using partially purified blood from one of the animals. Three showed transient antigenemia but 2 developed full blown evidence of the disease. All showed the same particle.

The absence of clinical symptoms in the majority of animals meanwhile has necessitated the use of relative new highly sensitive techniques for confirmation of infection, among which are radioimmunoprecipitation (RIP) and radioimmunoassay (RIA) for HBAg. With such admittedly expensive methods, Purcell et al last year demonstrated that the serum of more than 14 percent of a population of blood donors contain certain HBAg, even though most people in this group have not had hepatitis, blood transfusions or other opportunities for parenteral transmission of the disease. These studies suggest not only that a significant proportion of the population at some time had subclinical infection of hepatitis B but also that the disease is unexpectedly readily transmitted via a nonparenteral route.

Without the new techniques confirmation of infection in the primates would have been difficult if not impossible. This also suggests that previous investigators have also produced subclinical infections in various animals but have been unable to detect them. It is a good bet that reinvestigation of their work will produce other animal systems and perhaps tissue cultures for further laboratory work on the characterization of the suspected virus.

It appears, however, that no group is in a position to produce a hepatitis vaccine within a short period of time. Much has been learned about hepatitis but much remains unknown. Especially discouraging is that no comparable breakthrough has been achieved with hepatitis A which accounts for over 90 percent of all hepatitis infections. Scientists have yet to obtain a "handle" for it similar to HBAg and this growth of knowledge about hepatitis A has lagged far behind that of hepatitis B.—L.H.N.

Reference

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Basic Science And Practical Medicine: Marek's Disease Of Chickens

Marek's disease is a highly contagious disease, affecting the peripheral nerves and the visceral organs of domestic chickens. It results in a loss to the poultry industry of more than $200 million annually in the United States alone. Scientists at the Department of Argiculture principally at East Lansing, Michigan, studied this disease for more than 30 years before showing in basic studies that it is caused by a herpes virus. In the same year, a similar virus was isolated in turkeys and within 2½ years a vaccine has been developed that reduced the incidence of Marek's disease in vaccinated chickens by 90 percent, reduced condemnation of broilers by a similar amount, and increased egg production in layers by 4 percent. Efforts are now under way to reduce problems of cost, storage, transportation and use, in order to maximize the benefits of the vaccine.

But the story does not stop here. Marek's disease is a neoplastic disease and finding a successful treatment for it may entail a significant breakthrough in the control of at least certain kinds of human cancer. Viruses have been identified with cancer in laboratory animals since the turn of the century. But through the middle of the 1960's those so identified were virtually all of the RNA type and were transmitted vertically—that is passed from diseased egg cell to the cell of the offspring.

The work on Marek's disease in contrast is not only the first clear demonstration that a herpes virus produces lymphoma, but, more importantly, that the infection is horizontally transmitted (that is, spreads directly among organisms through contact or proximity) and can be successfully controlled by vaccine. The mechanism of protection is not yet understood but it opens a whole new way of looking at cancer.

In the light of this basic research and its boon to mankind, what shall we say about the present federal research funding policy, particularly in the mission-oriented agencies where support for a number of significant areas of investigation has been effectively cut, and perhaps more seriously, large numbers of areas have been dichotomized with ever increasing rigidity into basic or applied research with the basic being given a lowered priority or not immediately relevant and, therefore unimportant.[1] The fact is that it is a specious distinction to separate scientific research into pure and applied. Science is in its most fundamental sense an approach to solving problems. Its goals may be both specific and general and several centuries of experience have demonstrated a significant reciprocity between basic and specific goals.

The President in his March 16th message to Congress[2] disavowed the policy of separating basic from specific problems in research funding when he reported that all agencies and departments would support basic research. He spoke of "the importance of maintaining that spirit of curiosity and adventure which has always driven us to explore the unknown" and asserted the need to "continue to give an important place to basic research and to exploratory experiments which provide the new ideas on which our edifice of technological accomplishment rests."

The scientific community now eagerly looks forward to information on how these agencies and departments intend to translate the President's statement of principle into administrative practice.—L.H.N.

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Studies On Arthropod Vector-Parasites And Hosts

In Hamilton, Montana on September 15, 1971, many specialists met to consider current knowledge on the interaction of arthropod vectors with hosts and infectious agents and to identify areas requiring further investigations. At least 80 percent of all infectious diseases are arthropod-borne and yet minimum research effort has been directed toward an understanding of the dynamic roles of the arthropod vector and host in disease transmission.

Heretofore, the vector's capacity for disease transmission and the host's response to the vector are determinants which have been studies without the collaboration by specialists in different fields. There has, in fact, been little attempt at a multidisciplinary examination of the factors that determine the outcome of the interaction between host, parasite, and vector. At the symposium reviews of current knowledge were presented in two main topic areas: intra- and interspecific variations in the capability of vectors to transmit disease agents and second the response of host to arthropod bites.

There was a wide range of discussion of vector to host transmission of the causative entities of arbovirus disease, hemorrhagic, spotted and tick fevers, plague, tularemia, malaria, filariasis, and tick paralysis, an ascending motor paralysis induced by tick salivary gland toxin, is an example of a disease considered in the first topic area. Female ticks from each of 14 generations of Dermacentor andersoni raised at the Rocky Mountain Laboratory failed to induce paralysis whereas the opposite was true of ticks for each 11 generations of the same species from a field site where the frequency of paralysis was high.

Similar intraspecific variations in ability to cause or transmit disease is suggestive of single gene dominance and has been observed also in mosquito vectors of malaria and filariae. With arboviruses little is known beyond the laboratory observation that vector capability is related to the amount of virus ingested by the vector. In the second area, there is little information on intraspecific variability in the response of hosts to arthropods.

The immune response of guinea pigs to the cat flea (Ctenocephalides felis) has provided a basis for understanding the response to other blood-sucking arthropods with a discrete period of host contact. Examples are mosquitoes, black flies, and biting midges. The response, which progresses from initial nonreactivity is mediated by a hapten of low molecular weight, which requires conjugation with skin collagen before it causes immunogenesis. Each phase of the host reaction may influence the ability of an arthropod-transmitted pathogen to become established.

Thus, in a delayed hypersensitivity response to flea salivary hapten, the mononuclear cell infiltrate may provide a milieu that favors growth of the plague bacillus. In an immediate response, scratching and rubbing induced by pruritis may assist entry of disease agents as happens in Chagas disease. Microvascular dilation may permit easier access for organisms to the systemic circulation. This means that after one is bit by a vector, don't scratch.

In the case of arthropods with long term contacts such as ticks, host response directly or indirectly reject the vector, although the mechanisms are poorly understood. Notwithstanding, those responses are important in disease transmission especially with agents that proliferate and reach the infective stage in the salivary glands during engorgement of the tick, for instance, Babesia and Theileria. If the host is immune, of course the stage of tick development required for disease transmission may not be reached.

There were also identified the areas for future research with public health importance with respect to the arthropod. Study is needed with respect to genetic variability of vector capacity. Arboviruses in mosquitoes, for example genetic variation in the response of Aedes triserialis to the agent causing California encephalitis. Studies of Plasmodium species in Anopheles was also thought to be profitable. Greater emphasis is required on tick physiology especially the neurosecretory and hormonal systems. A special need was recognized to isolate and characterize the neurophysiological toxin of the tick.

With respect to the host's response to arthropod bites, delineation of the classes and subclasses of immunoglobulin in the immediate hypersensitive reaction is required. So also is the differentiation between delayed cell-mediated hypersensitivity and basophil cell responses. The oral secretion of arthropods need to be isolated and characterized immunologically and pharmacologically. A closer study of the cell types and tissue reactions at the bite site is required. Physiological studies of the microvascular changes at this site and adjacent areas are warranted.

Such research would lead to an understanding of the infection process in systems of arthropod, vector and parasite and host.—L.H.N.

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A Scientific Approach To The Altered States Of Consciousness (ASC)

An altered state of consciousness (ASC) is defined as a qualitative alteration in the overall pattern of mental functioning. In this state the experiencer feels his consciousness is radically different from the way it functions ordinarily. By contrast an ordinary state of consciousness (SoC) is defined not in terms of any particular content of consciousness or specific behavior or physiological change but in terms of the overall patterning of psychological functioning. The ASC experienced by almost all people are dreaming states and the transitional states between dreaming and waking. Many other people experience another ASC—alcohol intoxication, marijuana intoxication and more powerful psychedelic drugs such as LSD, meditative states, so-called "possession" states and autohypnotic states. Experiences of ecstasy, mystical union, other dimensions, rapture, beauty, space-and-time transcendence and transpersonal knowledge, are all common in ASC.

Because these are not treated adequately in conventional scientific approaches Tart[1] now proposes the creation of various state-specific sciences (SSS) with which to investigate ASC and not leave it to the cultists. To be sure, there are some aspects of religion which appear to resemble ASC. There are techniques that allow the believer to enter an ASC and then have religious experiences in that ASC which then become proof of his religious belief. People who have had such experiences usually describe them as ineffable in important ways that is not fully comprehensible in an ordinary SoC. Conversion at revivalistic meetings are the most common examples of religious experiences occurring in various ASC's induced by an intensely emotional atmosphere.

The crucial distinction between a religion utilizing ASC's and a sensory-state science is a committment of the scientist to reexamine constantly his own belief systems and to question the obvious in spite of its intellectual or emotional appeal to him. Investigators of ASC will encounter a variety of phenomena labeled religious experience or mystical revelation during the development of an SSS but they would have to remain committed to examining these phenomena scientifically and share their observations and techniques with colleagues and subject the belief, hypothesis, theorum, that result from these experiences to the requirements of leading to testable predictions. In practice this would be immensely difficult because of the immense emotional focus of mystical experiences. It would have to be undertaken by disciplined investigators if we are ever to understand various ASC's.

Throughout history man has been influenced by the spiritual and mystical factors that are expressed in the religions that attract masses of people. Spiritual and mystical experiences are primary phenomena of various altered states of consciousness. Because of such experiences untold numbers of both the noblest and most horrible acts of which people are capable have been committed. Yet in all that time that Western science has existed no concerted attempt has been made to understand these ASC phenomena in scientific terms. The only exception is Sigmund Freud's interpretations of dreams. This great prober into the unconscious did reveal that dreams are symbolic wish fulfillments. He recognized the profound forces in the unconscious that moulds man's feelings and actions. His work led to increasing our real knowledge of ourselves but it was not successful in helping to formulate a better philosophy of life.

The sciences we have developed to date are not very human sciences. They tell us how to do things but give us no scientific insights on questions of what to do, what not to do or why to do things. Accordingly, the youth of today and some mature scientists in increasing numbers are turning to meditation, oriental religions and personal use of psychedelic drugs. It seems the phenomena they encounter in the ASC's provide more satisfaction and are more relevant to the formulations of philosophies of life and deciding upon appropriate ways of living than "pure reason."

It is difficult to predict what the chances are of developing state-specific sciences. There are large numbers of scientists who are now personally exploring ASC's but few have begun to connect their personal exploration with scientific activities. Our knowledge is still too diffuse and dependent on our normal state of consciousness. It is quite probable, however, that state-specific sciences can be developed for such ordinary state of consciousness as auto-hypnosis, meditative states, lucid dreaming, marijuana, LSD intoxication, self-remembering, reverie, and biofeedback-induced states. In all of these ordinary state of consciousness's volition seems to be retained so that the observer can indeed carry out experiments on himself or others or both.

Some ASC in which volition to experiment during the state may disappear but in which some experimentation can be carried out if special conditions are prepared before the state is entered, might be alcohol intoxication, ordinary dreaming, hypnogogic states and high dreams. It is not clear whether other ASC's would be suitable for developing a state-specific science since in some, mental deterioration would be too great a risk.

Thus the question remains: will the scientific method be extended to the development of state-specific sciences so as to improve our human relations or will the immense power of altered states of consciousness (ASC) be left in the hands of cults and sects?—L.H.N.

Reference

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Gonorrhea Is Back

The incidence of gonorrhea has reached epidemic proportions. It is the most common of the venereal diseases, the most prevalent bacterial infection of adults in this country and the number one reported communicable disease occurring in the United States today. There were 624,731 cases of gonorrhea reported for fiscal 1971, an 8.9 per cent increase over that of 1970. These staggering statistics, however, reflect only a part of the true incidence because the greatest percentages of cases are thought to be unreported. Thus, it is estimated that more than 2 million cases of gonorrhea occurred last year. Obviously, the control of this disease is one of today's major public health goals. The attainment of this goal, however, is hindered by such problems as short incubation period, absence of immunity following infection, absence of a serological screening test and presence of a large reservoir of asymptomatic, infectious carriers.

Adding to these problems are the many patients with gonorrhea who are inadequately treated through the use of inappropriate antibiotics, or appropriate antibiotics with inadequate doses. Rudolph[1] has published a schedule intended only for the treatment of acute uncomplicated gonorrhea involving the cervix, urethra, rectum, or pharynx, but does not encompass the treatment of complications.

The preferred drug for parenteral treatment of acute, uncomplicated gonorrhea is 4.8 million units of aqueous procaine penicillin G divided into 2 doses and given as two intramuscular injections at one visit together with 1 gm of probenecid, given orally at least one half hour prior to the injection. These large doses are needed because the present organism is found to be relatively resistant to penicillin in ordinary doses.

The only biosynthetic penicillin that has proved of definite value in the treatment of gonorrhea is ampicillin and the recommended dose is 3.5 gm orally plus 1 gm of probenecid administered simultaneously. This dose has yielded excellent results and does offer an effective alternative to parenterally given penicillin for those physicians desiring an orally administered antibiotic for the treatment of gonorrhea. The only point is that the effect of this treatment incubating syphilis has not been established. As a result, patients so treated are required to have follow-up serological tests for syphilis done for three months.

There are patients who do not tolerate penicillin. In such instances, a new antibiotic, 2 gm of spectinomycin dihydrochloride pentahydrate in one intramuscular injection is recommended. It has an excellent cure rate. It comes in 2-gm or 4-gm vials and the incidence of reported side effects to this drug has been small. It is, of course, not given to children, pregnant women or to those individuals who are hypersensitive to it. The doses recommended may mask incubating syphilis and follow-up tests to detect possible coexisting incubating syphilis is mandatory in all patients who receive this drug.

If an orally given antibiotic is necessary for the treatment of gonorrhea in patients who do not tolerate either penicillin or spectinomycin, then tetracycline may be used. This, however, requires multiple oral doses to avoid rapid developing gonococcal resistance. An initial oral dose of 1.5 gm followed by 0.5 gm every six hours for four days is the recommended dose. With this drug, monthly serological tests for three months is necessary.

Not all antibiotics useful in the treatments of gonorrhea were included by Rudolph. For example, kanamycin is very effective but can have serious side effects, especially auditory damage. Even the suggested regimens above will continue to require careful monitoring and periodic resurveying to detect any change in their efficacy. Presently, however, they afford acceptable cure rates, and if judiciously applied should yield desired results. Every physician should become familiar with the recommended treatment of acute gonorrhea.—L.H.N.

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Transcendental Meditation: A Hypometabolic State

Mental states can markedly alter physiologic function. We know that stressful changes produce hypometabolic states during which there is increased sympathetic nervous system activity, increased oxygen consumption, heart rate, and these may, in fact, lead to hypertension as Herd demonstrated in animals.[1] A well-known reflex of overactive sympathetic activity was described long ago by the noted Harvard physiologist, Walter B. Cannon, and it is called "fight or flight" or "defense-alarm" reaction characterized by an aroused sympathetic nervous system marked by a rise in blood pressure, heart rate, blood flow to the muscles and oxygen consumption.

There are several ways in which an individual can control his physiological reactions to psychological events. The claims for such control have come from practitioners of meditation systems of the East: Yoga and Zen Buddhism. Many tests have been carried out on these systems which strongly indicate that meditation produced states of hypometabolism opposite to the "defense-alarm" reaction through control of the autonomic nervous system. In the early studies there were found a drop in oxygen consumption and in CO_2 production changes in electrical activity of the brain indicating a predominance of alpha waves which ordinarily become prominent when a person is thoroughly relaxed with eyes closed. Another response tested by early investigators was resistance of skin which rises with the degree of relaxation and which signifies increased blood flow.

If these findings could be confirmed, it could well contribute a method of total relaxation which could be of value to many individuals, who are tense, or have already developed diseases due to over activity of the sympathetic nervous system, as for example, hypertension. Accordingly, Wallace and his associates[2] undertook a systematic study of the physiological correlate of the meditative state.

Yoga means "union" a "higher" state of consciousness achieved through a fully rested relaxed body and a fully awake but relaxed mind. One widely practiced Yoga technique is called "Transcendental Meditation" and developed by Maharishi Mahesh Yogi and is taught by an organization of instructors whom he personally qualifies. The technique does not require intense concentration or any form of rigorous mental or physical control, is easily learned so that all subjects after a short period of training are "experts." There is no belief, faith or any type of autosuggestion involved in the practice. It involves no disciplines or changes in life style.

The practioner sits in a comfortable position with eyes closed. By a systematic method that he has been taught, he repeats a nonsense sound, such as om-ing then perceives it, repeating it with eyes closed until he has eliminated all thought. He attunes his mind to experience the sound freely so that his thoughts are kept out. More than 100,000 men and women in this country are said to have received instruction in transcendental meditation by the organization teaching it.

Wallace and his associates report on 36 subjects of which 8 were women in ages from 17-41, their observations during mediatation. The subject's experience ranged from less than a month to 9 years, with the majority having had 2-3 years in the practice. In general their oxygen consumption dropped by 20 percent and the CO_2 output by a similar amount. The blood lactase dropped from 11.4 mg. per 100 cc. to 8 mg. during meditation and even to 7.3 mg. during the post-meditation period. The blood flow in the forearm showed considerable increase to 32 percent in these subjects. All in all, it is reasonable to hypothesize that the low level of lactate found in subjects during and after transcendental meditation is an evidence of the thoroughly relaxed state during meditation.

Other measurements on the meditators confirmed the picture of a highly relaxed, although wakeful condition. The skin resistance rose fourfold. The heart rate slowed and the EEG changes showed an increase in intensity of slow alpha waves. In several subjects their change was accompanied by prominent theta waves in the frontal area. What it all adds up to is a wakeful hypometabolic state. How do these physiological changes during mediation compare with those in other relaxed states such as sleep and hypnosis? There appears to be no resemblance to either of these altered states of consciousness. In hypnosis there is no hypometabolic state at all and during sleep, oxygen consumption decreases but only after several hours. The EEG changes are entirely different as is the degree of change in skin resistance. It looks very much like a counterpart of the fight-flight reaction.

In our present environment, the defense-alarm reaction can be very inappropriate in many patients, especially in those who have or are developing hypertension or are over reacting to environmental stimuli or are in a state of over reactivity such as occurs in the psychoneurosis. In such circumstances, the hypometabolic state representing quiescence rather than hyperactivation of the sympathetic nervous system may indicate a guidepost to better health.

It should be well worthwhile to investigate the possibilities of clinical application of this state of wakeful rest and relaxation.—L.H.N.

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A New Hypothesis For Atheroma Formation And Localization

Why is it that the atheroma pattern of distribution of early atheromatosis lesions in the aorta predominate in the abdominal more than the thoracic portion? Why is it that in man the lesions are typically seen close to the mouth of branch arteries? Why is it that the small arteries and veins generally escape atheroma altogether? The obvious conclusion heretofore has been that turbulence of blood flow at arterial junctions in some way damages the wall thus rendering it liable to atheroma. But as noted above about localization of the lesions, such a thing does not account for predilection of atheroma for the abdominal rather than the thoracic aorta in which damage to the wall from turbulance might be particularly expected. Nor does it account for the absence of lesions in other parts of the vascular system.

Now Caro, et al[1] of Sweden have published a detailed analysis of the distribution and form of early atheromatosis lesions in the human aorta and in animals given cholesterol. They draw attention to the difference in the type of lesion occurring in these two conditions. In the human aorta the "flow divider"—that part of the artery separating the stream going to the branch artery from the main aorta stream is commonly spared from atheroma and cholesterol is deposited principally at the lateral part of the branch artery's orifice. In animals, however, with artificially raised levels of blood cholesterol, the atheroma is deposited preferentially on the "flow divider" itself. Caro, et al. have proposed an ingenious hypothesis to account for this apparent anomaly.

Instead of involving turbulence they attribute the distribution of lesions to alterations in the mass transport of cholesterol into and out of the arterial intima in accordance with the changes in shear of the flowing blood against the wall. In a simple fluid the shear is maximum at the wall and minimum on the tube axis. In the case of blood, the element of viscosity enters into it and the shearing forces across the whole cross section of the tube depends on the mean velocity of flow.[2] It is commonly believed that cholesterol is being synthesized within arterial walls and carried away in the blood by diffusion at the intimal surface. Accordingly, the rate of diffusion will depend on its concentration within the wall. Conversely, where the flow is sluggish and the shear low, then the diffusion of cholesterol from wall to lumen will be slow and therefore, the concentration of cholesterol will tend to be relatively high.

Such a hypothesis would explain the predilection of atheroma for the lateral part of the orifice of a branch artery and the sparing of the "flow divide". A merit of the hypothesis is that it accounts for the relative freedom of the thoracic aorta from atheroma where the flow is faster and the predilection of lesions for the abdominal aorta where the flow is slower. Since the shear against the wall rises peripherally in the arterial system and is also high in capillaries, the hypothesis would also account for the relative freedom of small vessels from atheroma. The hypothesis is also compatible with the idea that exercise staves off atheroma because an increased rate of flow would tend to lower the concentration of cholesterol in the arterial wall.

In experimental animals fed cholesterol, the cholesterol is deposited in arteries by diffusion from the blood where its concentration is high to the intima where its concentration is lower. Accordingly, the gradient for diffusion would occur in the regions where the flow was faster and shear greater, notably the "flow divider". This interesting work seems to meet the first requirements of any hypothesis which is to explain all the known facts. Another interpretation of the observations in man involving the tendency of platelets to aggregate particularly at areas of relatively low flow, could be made in terms of J. B. Duguid's hypothesis in which local thrombosis found as the arterial intima is the percursor for atheromatous placques. However, this hypothesis does not account for the type of lesion found in cholesterol fed animals. We still need more information on association of hypertension with atheroma and the sparing of veins.

If Caro's hypothesis is correct then large arteries contain within themselves the seeds of their own destruction by secreting cholesterol. The harm can only be checked if wall shear is left high and cholesterol low. It is tempting to suppose that the cholesterol or a derivative of it synthesized by arteries is concerned with that property of the walls of blood vessels—inhibition of clot formation on their surface.

The new hypothesis goes only part of the way towards explaining the genesis of atheroma. There must be much more to it since we know that a first stage in experimental atherosclerosis is arteritis. This has recently been demonstrated in venous bypass grafts. The field is difficult and there is yet much to be learned.—L.H.N.

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2. Whitmore, R. L.: The Flow Behavior of Blood in the Circulation. Nature, 215: 123, 1967.

The Edwards Plan For National Health Insurance

The Edwards Plan to make funds available for the average citizen to meet his health care bills is to permit him to reduce his taxes by subtracting amounts spent for health care. For example, if the man owes the government $3,000 in taxes and he spent $1,000 in providing health care for himself and family then he would owe the government $2,000. If he had had $2,700 withheld from his wage, the government would owe him a refund of $700. It would be a real tax saving.

Every citizen would be paying his own bills with his own money. There would be no increase at all in administrative costs (by comparison, administrative costs for Medicare program in 1970 alone totaled $150 million. By allowing a tax reduction for all health expenditures whether prescribed or not, the government would encourage citizens to get preventive health maintenance care. Because it would be an eventual reduction rather than a prepayment plan it would not encourage over-utilization of physicians' time and hospital facilities as much as might be the case with a government subsidized HMO facility.

If there is a catastrophic cost, say $10,000 and the man is in the $2,000 bracket, the man would simply arrange to pay his doctor and hospital $2,000 for a period of 5 years. At the end of that time he would be out of debt and once again resume paying his taxes. Furthermore, if health insurance premiums are deductible from taxes most citizens could afford to buy private catastrophic coverage.

The "plan" is not the ideal solution. It would be better to simply reduce federal taxation to a point which would have the same effect. But this seems hopeless as long as up to 130 billion a year is being spent on war and its preparation. Reduction of a major portion of what is now taken by taxation would provide the extra funds to permit most citizens to provide for their health care needs. Unhappily, there is even less chance that government will voluntarily reduce its tax rate than there is that it will permit total tax credits for all health care.

Edwards thus proposes simply that the government keep its hands off; that ideally it reduce its taxation to permit citizens to retain income and spend it for health care, but if that is too much to ask, that it permit total full dollar write-offs. So any money a citizen wishes to spend to stay well will be securely out of the reach of the tax collector.

As it is, the average citizen works 30 minutes a day to pay for his medical care and 2.5 hours a day to pay for his taxes. Some don't have enough left after taxes to take care of the cost of staying health. This plan would help that problem. Government would never get its hands on the money and lose the possibility of expanding the bureaucracy and the role of the planners in our lives. Of course, the planners won't like it. In all likelihood the citizen will.—L.H.N.

Reference

1. Edwards M. H.: I too have a plan. Private Practice 4:18, 1972.

Meeting Notices

The information on this "notices" page is offered as a service of all specialty groups and allied health agencies in order to publicize postgraduate educational opportunities available to subscribers. The deadline for publication in Connecticut Medicine is the tenth of the month preceding, date of issue. Send copy to: Connecticut State Medical Society, 160 St. Ronan Street, New Haven, Connecticut 06511.

GENERAL

December 6—Wednesday
Semi-Annual Meeting
CSMS House of Delegates
Sheraton-Park Plaza
New Haven

April 24, 25, 26, 1973
181st Annual Meeting of the
Connecticut State Medical Society
Hartford

CONNECTICUT MEETINGS

September 16—Saturday
American Academy of Orthopaedic Surgeons
"Common Perplexing Knee Problems"
Harrison Inn—Heritage Village
Southbury, Connecticut
Contact: Peter V. C. Digman, M.D.
1211 West Main Street
Waterbury, Connecticut 06708

October 18—Wednesday 9 a.m. -4 p.m.
Multidisciplinary Approach to Patient Care
"Roles and Responsibilities of Selected Health Care Professionals in Diagnosis, Prognosis and Treatment"
Panel Discussions—Case Histories—Practical Applications.
Keynote Speaker: Frederick G. Adams, D.D.S., M.P.H., Dean of the School of Allied Health, University of Connecticut
Registration and Reservations: CSMS (865-0587)
Sheraton-Park Plaza, New Haven

November 9—Thursday 1 p.m. to 5 p.m.
Symposium on "The Addictive Personality: Treatment and Prevention"
Speakers, Dialogue, Question-Answer Session
Hartford Hilton Hotel, Hartford

November 15—Wednesday 9 a.m.-4 p.m.
Fourth Biennial Perinatal Seminar
"Amniocentesis in Diagnosis"
"The Decision for Abortion: Public or Private?"
The Auditorium of the Connecticut General Life Insurance Co.
Bloomfield, Connecticut
Sponsored by the CSMS, the Hezekiah Beardsley Chapter of the AAP, Yale University School of Medicine and the University of Connecticut School of Medicine.
Reservations: CSMS—865-0587

SAVE THIS DATE

Semi-Annual Meeting
House of Delegates
Sheraton-Park Plaza
December 6, 1972

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Assistant Executive Director
Scientific Activities

SUMMARY OF ACTIONS COUNCIL MEETING

Thursday, July 27, 1972

I. ATTENDANCE

Present in addition to the Chairman, Dr. K. F. Brandon, and the Vice-Chairman, Dr. D. A. Grendon, were: Drs. Root, Jr., Backhus, Nolan, Weber, Jr., Gardner, Fabro, Hess, Bradley, Rem, Ragland, Jr., Harwood, Pelz, Nemoitin, VanSyckle, Friedberg, Harkins, LaBella, Freedman and Krinsky.

Also present were: Mrs. Lindquist, Mr. Tomat, Mr. Olson (FCMA) and Dr. Richards.

Absent were: Drs. Cramer, Spitz, Dean, Johnson, Wilson, Dambeck, Roch, Canzonetti, Milles, Hastings and Klare.

In Memoriam

Having been apprised of the death of Louis H. Nahum, New Haven, Editor of the Journal, on July 25, 1972, all present at the meeting stood and observed a moment of silent prayer in his memory.

Thereafter, a memorializing resolution was adopted which is published elsewhere in the Memorial Supplement to this issue.

II. ROUTINE BUSINESS

Approval of Minutes

As printed and distributed, it was VOTED to approve the minutes of the meeting of June 28, 1972.

Life Memberships

It was VOTED to approve applications for Life Membership received from the following eligible Active Members:

Abraham H. Baskin, 72 Wintonbury Avenue, Bloomfield (H)—1/1/73
Max L. Berlowe, 2 Church Street South, New Haven (NH)—1/1/73
Eugene N. Cozzolino, 640 Savin Avenue, West Haven (NH)—1/1/72
M. B. Jones, 197 East Avenue, Norwalk (F)—1/1/73
Andrew W. Orlowski, 64 Belleview Avenue, Torrington (L)—1/1/73
John T. Spignesi, 393 Center Street, Wallingford (NH)—1/1/72
Arthur C. Unsworth, P.O. Box 181, Center Harbor, New Hampshire (H)—1/1/72

Resignations, Appointments, etc.

(a) *Committee on Continuing Medical Education*: It was VOTED to accept, with regret and thanks for past service, the resignation of Arthur Ebbert, Jr., New Haven, as a member of this Committee. It was further VOTED to appoint Robert L. Scheig, New Haven, to Committee membership for the balance of 1972-73.

(b) *Council of New England State Medical Societies*: It was VOTED to request the Board of Trustees of CNESMS to accept the Chairman of the CSMS Council in lieu of the Secretary or Executive Secretary (as recommended by the CNESMS bylaws) as one of the six CSMS delegates to the New England Council; also, to authorize the President of CSMS to designate which of the six CSMS delegates is to serve as a member of the CNESMS Board of Trustees.

(c) *Committee to Study Perinatal Morbidity and Mortality*: It was VOTED to accept with regret and thanks for past service, the resignation of Francis W. Helfrick, Manchester, as a member of the Committee. It was further VOTED to appoint Metin Bedizel, Manchester, to Committee membership for the balance of 1972-73.

(d) *Liaison Committee with the State Welfare Department*: It was VOTED to appoint to membership on the Committee, for the balance of 1972-73, the following: Marjorie A. Purnell, Rockville, and Arthur D. Keefe, Hartford.

III. OLD, NEW AND SPECIAL BUSINESS

Report—18th Annual Conference of State Mental Health Representatives

It was VOTED to accept for filing a report submitted on the proceedings of this Conference (Scottsdale, Arizona, 4/13-15/72) by Walter W. Kemp, Stamford, who attended as a representative of the Society. Copies of the report have been distributed to the members of the Committee on Mental Health and of the Committee on Drug Abuse Educational Programs. It was further VOTED to urge all members of the Society to participate in drug abuse programs at the local level, such urging to be done via communication with the component County Associations (urging them to urge *their* members to participate) and by direct communication (publicity) from the CSMS office. A copy of the report will be sent to the county associations.

Communication—NHCMA Board of Governors

In a separate communication, the NHCMA Board brought to the Council's attention for "discussion" an excerpt of a letter received by a patient (anonymous) from an insurance carrier (unidentified) which, in brief, advised the patient that the carrier would make payment of a physician's bill up to the limit of the "allowed covered expense" determined by the carrier and that, should the physician take legal action to collect the uncovered portion of his fee from the patient, the carrier stood ready to defend the policyholder at the expense of the carrier. It was VOTED to receive this communication for filing.

In addition, it was VOTED to receive for filing two documents which related to the matter presented by NHCMA. These were: A memorandum from the AMA which reproduced the subject action taken by the AMA House of Delegates at the recent San Francisco meeting; a letter to the chairman of the CSMS Committee on Third Party Payments from the Secretary, Group Division, Aetna Life and Casualty Company, which stated that the Aetna Company has rescinded its policy of providing legal defense for policyholders and included a sample of the revised letter that will be sent to policyholders in explanation of the amount of payment allowed as "covered expense". The AMA resolution, in brief, advocates strongly that management, labor and third party carriers consult with duly constituted representatives of organized medicine before determining "usual, customary and reasonable" fees; recommends that peer review be used by third parties to resolve differences with physicians regarding fees; and advises all third parties to recognize that the medical profession will not condone actions on the part of third parties which would encourage or promulgate litigation in the settlement of fee disputes.

Pursuant to these actions, the Council further VOTED (with Dr. Bandon abstaining) that steps be taken (by staff) to inform the Society's members of the nature of the subject problem and what has been and is being done to correct it, and to urge members to inform the CSMS office of instances of the problem that they may encounter in their own practices. Further, it was VOTED to endorse the subject resolution adopted by the AMA House of Delegates, and to suggest to the chairman of the CSMS Committee on Third Party Payments that a change be sought in the wording of the revised letter that Aetna is now sending to policyholder; i.e., The carrier will pay the physician's charge if it "does not exceed *our determination of* the prevailing level of fees charged for the procedure in question".

Report—Committee on Public Health

It was VOTED to accept for filing a report of the Committee on the subjects of venereal disease education and control, and to act on two recommendations contained therein as follows:

(1) It was VOTED to accept for filing a recommendation of the Committee that the accepted treatment for gonorrhea and syphilis be published in the Journal and that the Committee on Public Relations be requested to undertake a program of public education which would stress the necessity for prompt and adequate treatment of the venereal diseases.

(2) It was VOTED to adopt a resolution offered by the Committee as follows:

WHEREAS: There is presently a major venereal disease epidemic in this state, and

WHEREAS: It is reported that the Venereal Disease Control Section of the Connecticut State Department of Health is presently without a full time medical director; and

WHEREAS: This Section is also reported to lack adequate ancillary personnel therefore be it

RESOLVED: That the Council of the Connecticut State Medical Society urge the Governor to allocate adequate funds to the Venereal Disease Control Section of the State Health Department, from emergency sources if necessary, to provide for the recruitment of the trained personnel required to enable the Section to deal more effectively with the venereal disease epidemic that now exists in Connecticut.

It was further VOTED to release notice of this action to the news media.

Report—Committee on Public Health

It was VOTED to accept for filing a report of the Committee which recommends that the Society, through staff activities, promote the holding of educational programs on venereal disease (the crisis, diagnosis, treatment, etc.) by County Associations, city societies and hospital staffs throughout the state. The CSMS staff activities would supplement those of the State Health Department to "book" such programs, with the Health Department furnishing the personnel, visual aids, etc. for program presentation. It was further VOTED to approve implementation of this recommendation, using whatever methodology and promotional aids the staff find practical. Commissioner Foote is to be apprised of this action.

Nominations to AMA Councils and Committees

Pursuant to the directive of the Council (6/28/72), the Committee on Preliminary Study of Nominations filed a report on its evaluation of members of the Society who had indicated an interest in being nominated to the AMA Board of Trustees for appointment to various AMA Councils and Committees. It was VOTED to accept the report of the Committee and to approve its recommendations for nominations as follows:

Council on Environmental and Public Health—Gaert S. Gudernatch, Sharon

Committee on Medicine and Religion—Kurt Pelz, Clinton

Council on Legislation—James H. Root, Jr., Waterbury

Council on Health Manpower—Orvan W. Hess, New Haven

Committee on Health Care Financing—Kenneth F. Brandon, Hartford

Commission on Emergency Medical Services; Committee on Community Emergency Services—Edward A. Rem, New Canaan

It was further VOTED to approve several other tentative nominations, provided that the information needed to forward them to the AMA was received at the Society's headquarters not later than 8/2/72.

Reports—Committee on Public Relations

It was VOTED to receive as information the minutes of the 6/27 meeting of the Committee on Public Relations. Acting on a specific section of the minutes, the Council further VOTED to "adopt, as a matter of CSMS policy, the recommendation that ambulatory care coverage be included in health insurance plans". Finally, it was VOTED to refer back to the Committee for implementation, the Committee's recommendation that this statement of policy be publicized through an appropriate press release.

Policy Statements re Health Care Foundations

On recommendation of James H. Root, Jr., Waterbury, the Council VOTED to adopt policy statements re "health care foundations" as follows:

"The Council of the Connecticut State Medical Society believes that the Foundation health care concept is more acceptable than the Health Maintenance Organization (HMO) concept with the view in mind of protecting the privately practicing physician and his patients, and, at the same time, providing high quality, reasonably priced medical care to the people of Connecticut; and

"That the Council of CSMS urge all of the Society's component County Medical Associations to look into the Foundation concept, thoroughly and in all details, recognizing the fact that peer review is one of the most basic ingredients of the Health Care Foundation."

In conjunction with the discussion preceding the foregoing actions, Isadore H. Friedberg, Newington, gave a verbal report on the progress that has been made by the Hartford Association toward establishing a viable health care plan (foundation) and some of the successes and problems that have been, and are being, experienced as it moves toward becoming operational — hopefully, within the next 3-6 months. Without vote, the Council requested Dr. Friedberg to submit in writing the essential information he had presented verbally in order that the Council might have the opportunity to study the report and place it on file for future reference.

In an action related to the adoption of the two statements re Health Care Foundations, the Council further VOTED to approve a corollary statement as follows:

"Nothing in the Council's expressed interest in Foundations or HMO's shall be construed as denigrating or otherwise abandoning the private practice of medicine as the keystone of the traditionally successful method of meeting the health care needs of the people of the State of Connecticut".

Endorsement—"Connecticut Cancer Epidemiology Program"

Having received copies of the proposed protocol for forming a CCEP, as drafted by a planning committee under the chairmanship of Health Commissioner Foote, the Council VOTED to endorse the establishment of a CCEP, as outlined in the protocol, and to make nominations for membership on the CCEP Council (Board of Directors) as follows:

E. Tremain Bradley, Norwalk—4 year term
Wayne P. Whitcomb, New Haven—2 year term

It was further VOTED to defer until the next meeting the nomination of alternates to Drs. Bradley and Whitcomb.

Commissioner Foote is to be notified of these actions, and copies sent to named representatives on the planning committee from the Yale and UConn Medical Schools.

Date and Place—1972 Semi-Annual Meeting, House of Delegates

It was VOTED to approve Wednesday, December 6, 1972 as the date for the 1972 semi-annual meeting of the House of Delegates, and to approve the Sheraton-Park Plaza Hotel, New Haven, as the place for same.

N.B.: *The foregoing is a summary of the proceedings and action of the Council on July 27. Detailed minutes of the meeting are on file at 160 St. Ronan Street, New Haven, for perusal by an interested member of the Society.*

Placement Opportunities

Allergist—To assume active private practice. Present allergist will remain to orient new physician. Conveniently located community. Drawing population of 200,000.

Anesthesiologist—Board eligible or Board certifield. Hospital of St. Raphael. Group Practice. Send resume to M. Garofalo, M.D., P.C. 1423 Chapel Street, New Haven, Connecticut.

Anesthesiologist—Position available as an associate to board certified anesthesiologist in an attractive, progressive general hospital. Excellent staff. Generous remuneration. Minimum amount of call with maximum vacation time. Write or call: Marvin Albert, M.D., World War II Veterans Memorial Hospital, Paddock Avenue, Meriden, Connecticut 06450. 203-237-5531.

Anesthesiologist—Two board eligible or certified anesthesiologist needed for large community hospital in the central part of the state.

Anesthesiologist—Position available in a medium sized hospital in north-central part of the state.

Anesthesiologist—To join three man group in a 180 bed community hospital. Inhalation therapy and respiratory physiology involved. Semi-rural area near the University of Connecticut. Contact Anesthesia Associates, P.O. Box 23, Willimantic, Connecticut 06226.

Chest Clinic Physician—35 hours. Excellent fringe benefits. Training available as needed. Contact: James A. Hanaghan, M.D., Director, Division of Tuberculosis Control, Hospital Care and Rehabilitation, Office of Public Health, 79 Elm Street, Hartford, Connecticut 06515.

Family Practitioner—To head Drug Dependence Unit in a private psychiatric hospital. 35-hour week. Salary appropriate to experience. Private practice permitted. Contact: Leo H. Berman, M.D., Hall-Brooke Hospital, Westport, Connecticut 06880 (203) 227-1251.

Family Practice—Two cities just north of Hartford in search for practitioners. Growing communities on Connecticut River. Physician Search Committees willing to assist newcomer with free office rent, etc.

Family Practice—Southwestern Litchfield County. Community hospital. Conveniently located.

Family Practice—Growing community seeks family physicians. North-central Connecticut. Approximately 47,000 population. Several hospitals in the area. New hospital in planning stages. Number of specialists in town. Conveniently located.

Family Practice—Full time or part time associate wanted for the shore community of Waterford, Connecticut. Busy summer practice. Community hospital readily available.

Family Practice—Small community in the northwestern corner of the state requires a practitioner. Community search committee. Contact: Henry L. Barnett, M.D., Sheffield, Massachusetts.

Family Practice—Physician needed to assume practice. Home and office space available. Central Connecticut. Excellent location. Contact: William W. Dickinson, M.D., 63 Hill Avenue, Yalesville, Connecticut 06492.

Family Practice—Staff of the Bristol Hospital wishes to assist a new physician with setting up practice. Contact: Stuart Falk, M.D., 3 Woodland Street, Bristol, Connecticut 06010.

Family Practitioner or Internist—Wanted to assume an active practice in southern Connecticut. Hour from NYC. Physician wishes to retire soon.

Family Physician—Young practitioner needed to join three other family doctors in medium-volume, quality patient care practice. Modern practice in beautiful and affluent Long Island Sound community, 50 minutes from New York City. No obstetrics. No pediatric patients less than one year old. Salary first year leading to full partnership or corporate benefits in three years. Best possible opportunity to create and realize full potential in a versatile family practice in a stimulating and well staffed medical community.

Family Practitioner or Internist—Association with a general practitioner. Good practice in an urban setting in central

Connecticut. No OB or major surgery. Part-time university student health work, if desired.

Family Practice or Internal Medicine—Associate needed to assume an active practice from physician who wishes to retire at the end of 1973. Fully equipped, modern office. Less than an hour to NYC.

Family Practitioner or Internist—Needed in growing community in central Connecticut. Associate arrangement with physician who has a large practice and wants to consider retiring.

Family Practice—Associate to join young physician in attractive community east of Hartford. Community hospital. Good location.

General Medicine—Physician needed for the Danielson-Putnam area. Contact John Woodworth, M.D., 167 Daggett Street, Moosup, Connecticut.

General Practice, Internal Medicine, and ENT: Needed in town of Torrington. 200 bed hospital. 50 physicians, over 50,000 population. Contact Joseph F. J. Curi, M.D., Chairman of Search Committee, Charlotte Hungerford Hospital, Torrington, Connecticut 06790. 203-482-0441.

General Practice and Internal Medicine—Both for solo and hospital based practice. Medium sized, north central community. Community hospital. Needed immediately.

General Medicine and Internal Medicine—Northwestern Connecticut community seeking to attract practitioners. Associate type practice possible.

Home and Hospital for the Aged in search of internist or general practitioner interested in geriatric medicine. Responsible for staff physicals. Salary and possible housing.

Industrial Medicine—Internist needed for large Connecticut employer. Contact: R. J. Leonard, M.D., Medical Supervisor, Pratt & Whitney Aircraft, East Hartford, Connecticut 06108.

Internist—Certified or Board eligible. Wanted immediately to assume very active practice in Fairfield County, Connecticut. One hour from New York City. Gross over $200,000. Hospitals conveniently located. Privileges assured. Must be personable and have a good personality. Send resume and date available.

Internist—Four man group in Fairfield, Connecticut, in search for an associate. Send resume to the Physician Placement Service.

Internist—A third Internist is needed to join two other Internists in the town of Manchester, Connecticut. Office located across the street from a 300 bed community hospital which is currently in the second of a three stage building program. Manchester is located fifteen minutes from Hartford, one hour from New Haven, one hour and a half from Boston and two hours from New York City. For further information contact: Harold J. Lehmus, M.D., or David L. Warren, M.D., 56 Haynes Street, Manchester, Connecticut 06040. Telephone: 203-646-1167.

Internist—General medicine. To join young internist in growing practice. Early partnership. New London-Mystic area.

Internist—Several opportunities with the State of Connecticut. Contact John J. Crowley, Personnel Administrator, 79 Elm Street, Hartford, Connecticut 06115 or Edmund Beutsch, Veterans' Home and Hospital, Rocky Hill, Connecticut.

Internist—Two internists, hospital based, seeking expansion into larger group.

Internist—Board certified or eligible with interest in allergy, rheumatology or infectious diseases wanted to associate with Grove Hill Clinic. W. T. Livingston, M.D., Grove Hill Clinic, New Britain, Connecticut.

Internist—Third physician needed for internal medical practice in Hartford.

Internist—Need for cardiologist in the Waterbury area.

Internist—Preferably Board Certified or eligible, for chronic disease and cancer hospital having sections for TB in adults and children. 35 hr. week, 11 paid holidays, sick leave, 3 weeks vacation after one year of service. Salary level: $23,227-28,333. Paid health insurance and minimum charge for life insurance. Apartment available for physician with small family. Write Medical Director, Uncas-on-Thames Hospital, Norwich, Connecticut 06360.

Internist—Associate needed to join two other internists in southern Fairfield County. Conveniently located. Community hospitals in the vicinity.

Internist—Medium sized Berkshire Hills Community in northwest Connecticut witheasy access to Hartford, New York, Boston. Modern 85 bed hospital with new coronary intensive care unit. Academic affiliations available. Opportunities available with another ABIM certified specialist for multi-specialty group practice to provide guaranteed free time. Initial competive subsidy.

Internist or Family Practitioner—Needed for the Groton-New London area. Possible association with another practitioner.

Primary Physician needed for the town of Stonington. Coastal location. Town search committee: James M. Spellman, Stonington, Connecticut.

Obstetrician-Gynecologist—Group practice is looking for a second ob/gyn. 12 man multispecialty group. Northwestern Connecticut. Conveniently located to New York State. Send resume to Manager, Sharon Clinic, Sharon, Conn.

Ob/Gyn—Associate needed for Waterbury group.

Ophthalmologist—Four vacancies. Each in the larger cities of Connecticut. Immediate opportunities.

Orthopedics—Immediately available due to sudden illness. Needed to assume active solo practice in rental, fully equipped and newly furnished 1700 square foot office in prestigious building and location. Write or call Howard Green, M.D., 111 East Avenue, Norwalk, Connecticut 866-0570 or 866-8100.

Orthopedic Surgeon—Associate needed to join three other orthopedic surgeons in central Connecticut.

Otolaryngologist—Associate needed to join two other physicians in an urban area in central Connecticut.

Otolaryngologist—Central Litchfield County in search for specialist.

Pathologist—Director of Pathology to direct laboratories at the William W. Backus Hospital, 326 Washington Street, Norwich, Connecticut 06360.

Pathologist—Board Certified CP-PA with up to 10 years experience for university affiliated community hospital. Completing expansion to 400 beds. Immediate opening. Connecticut license eligibility; university appointment; salary negotiable. Contact Dr. I. Rothstein, Mt. Sinai Hospital, Hartford, Conn. 06112.

Pediatrician—Send resume to Administrator, Day Kimball Hospital, Putnam, Connecticut. Search committee wishes to attract physicians.

Pediatrics—Needed for growing community in the central Connecticut area. Small community hospital. Search Committee willing to assist with the establishing of a practice.

Pediatrics—Third pediatrician needed to join two young Board certified, Fellows of AAP, eastern part of the state. Large, general pediatrics practice. Good first year salary with corporate benefits and full partnership after two years.

Pediatrics—Additional coverage needed in the New London area.

Pediatrician—Needed to join physician in the Waterbury area.

Pediatrician—Community of Enfield needs pediatrician. Growing community north of Hartford.

Pediatrician—To join pediatrician in northeastern portion of the state.

Pharmaceutical Company Physicians—Openings in Clinical Pharmacology, Clinical Research, and/or Medical Communications and Industrial Medicine in Connecticut and Mid-Atlantic states. G.P.'s as well as specialists desired. No prior industry experience necessary. Recent med school graduates welcomed. For further information please contact: Martin C. Sampson, M.D., F.A.C.P. Sampson-Neill Associates, Inc., 543 Valley Road, Upper Montclair, N.J. 07043. (201) 783-9600

Psychiatrist—For greater Bridgeport Community Mental Health Center to be opening in October, 1972. Contact: Robert J. McCully, 1862 East Main Street, Bridgeport, Connecticut.

Psychiatrists—Needed for state facility. Write Superintendent, Norwich Hospital, Norwich, Connecticut 06360.

Psychiatrists—Openings in mental hospitals and mental health clinics under the auspices of the State of Connecticut. Write Personnel Administrator, Department of Mental Health, 90 Washington Street, Hartford.

Psychiatrist—Board Certified or Eligible, to Direct Mental Health Clinic in General Hospital, half time, $15,000 to $25,000 depending on qualifications, opportunity for private practice, prefer with clinical experience and interest in development of comprehensive community services; attractive living in semirural community with University, near urban centers; send curriculum vitae with inquiry to Richard B. Ogrean, Administrator, Windham Community Hospital, Willimantic, Connecticut.

Psychiatrist—To head Drug Dependence Unit in a private psychiatric hospital. 35-hour week. Salary appropriate to experience. Private practice permitted. Contact: Leo H. Berman, M.D., Hall-Brooke Hospital, Westport, Connecticut 06880 (203) 227-1251.

Radiologist—Needed immediately at Veterans Hospital. Contact Medical Director, Rocky Hill Veterans Hospital, Rocky Hill, Connecticut.

Senior Physician—positions available at Norwich Hospital. Primary responsibility for medical care of geriatric and mentally ill patients in a community oriented, geographically unitized hospital with many forward looking, exciting programs. Starting salary $20,465, many fringe benefits, housing available. Write Superintendent, Norwich Hospital, Norwich, Connecticut 06360.

Surgery—General—Board certified surgeon seeking Board certified partner or associate in general surgery to practice in northern Connecticut. Small community hospital. Attractive community. Conveniently located. Write Physician Placement Service.

ANYONE INTERESTED IN THE ABOVE IS ASKED TO CONTACT THE PHYSICIANS' PLACEMENT SERVICE, 160 ST. RONAN STREET, NEW HAVEN, CONNECTICUT

Placement Wanted

Allied Personnel

General clinical lab technician or lab assistant to a physician(s): graduate of Vermont College and Boston City Hospital. Gretchen C. Stahl, 75 Seymour Avenue, Derby, Connecticut.

X-Ray Technician: Registered. Graduate of Bridgeport Hospital School of X-Ray Technology. Lorraine R. Bradley, 29 Church Hill Road, Trumbull, Connecticut 06611.

Physician's assistant in general medicine, pediatrics or general surgery: graduate of Cleveland Clinic Foundation. 24 years old. Joseph P. Checca, Jr., 1910 South Hulmac Ct., Apartment D, Columbus, Ohio 43229.

Laboratory Assistant: B.A. and M.S. from University of Connecticut, John M. DaSilva, Jr., 3 Sun Street, Enfield, Connecticut 06082.

Physician's Assistant—28 years old. Available September 1972. Graduate of Duke's P.A. Program. Wishes to work with surgeon. Interested in coastal area. William M. Signorini, 2112 Broad Street, Apartment D-18, Durham, North Carolina 27705.

Physician's Assistant—32 years old. To assist general or thoracic surgeon. Available Sept. 1972. Duke University graduate. John J. Gerstbrein, 923 West Markham Avenue, Durham, North Carolina 27701.

MEDIHC Program—Former military medics; number of candidates available. Contact: Henry J. Miller, Military Experience Directed into Health Careers, 640 Chapel Street, New Haven, Connecticut 06510. Phone: 865-0862.

Anesthesia—32 years old. Board eligible. (FLEX) Presently in practice. Interested in medium sized community in group or associate type practice. Husband a general surgeon. Celia Mercado- Sagullo, M.D., 138 Terrace Place, Brooklyn, New York 11218.

Cardiology—Partnership, Associate, or group practice. Medium sized community. Teaching hospital affiliation if possible. (FLEX) Fellow in Cardiology at UCLA Medical Center. Shuja Ghaznavi, M.D., Apt. #3B, 540 South Euclid Ave., Pasadena, California 91106.

Emergency Room Physician — Connecticut license. Desires position from March, 1973, to July, 1973. ER experience. Presently in the service. Perin W. Diana, Jr., M.D., USA Medical Center, Box 130, APO San Francisco, California 96331.

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Side effects: Blurred vision, dry mouth, dysuria, and other atropine-like side effects may occur at high doses, but are only rarely noted at recommended dosages.
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This southwestern desert lizard seeks
shelter in crevices of rocks.
When attempts are made to probe him
from his niche, he gulps air
until his torso is distended up to
sixty per cent over its normal size...
thus wedging himself tightly
in place and preventing capture.

Family Practice—35 years old. Presently in practice. Will have Connecticut license by early November. Interested in group or solo practice. Indarjit Singh, M.B., Ch.B., 14 Robinhood Drive, Dundas, Ontario, Canada.

Gastroenterology—Board eligible. Available November. Desires large community in group or associate practice. 32 years of age.

Internal Medicine: Hematology-Oncology—Board eligible. Available 1/73. 33 years old. Large or medium sized community. Group or associate practice. John S. Hunt, M.D., 11611 Chenault Street, Los Angeles, California 90049.

Internal Medicine—48 years old. Desires salaried position in large or medium sized community. Board eligible. Available in short notice.

Internal Medicine-Hematology—Board eligible. Prefers group practice. 32 years old. Available immediately. Eugene F. Cheslock, M.D., 107 Beverwyck Drive #11, Guilderland, New York 12084.

Internal Medicine—Board eligible. 34 years old. Connecticut license. Presently available. Associate practice. Willing to assume practice. NYU and Yale trained.

Internal Medicine-CV—National Boards, Board certified. 48 years old. Connecticut license. Interested in hospital related position or group practice. John J. Mead. M.D., 211 East 53rd Street, New York, New York 10022.

Internal Medicine—Available January 1973. Board eligible. Connecticut license. Solo or associate practice. 42 years of age. Bernard L. Meyers, M.D., 18 Second Street, Troy, New York, 12180.

Internal Medicine and Endocrinology—Available immediately. Board eligible. FLEX. 42 years old. Group or associate type practice. T. N. Paul, M.D., 2900 S. Lincoln Avenue, North Riverside, Illinois 60546.

Internal Medicine—Part time work in Hartford area. Board eligible. Connecticut license. Clinic work or ER will be considered. 29 years old.

Internal Medicine-Hematology — Available December 1972. Board eligible. Medium size community with group or associate practice desired.

Internal Medicine-Cardiology—Board eligible. 35 years old. (Flex) Prefers institutional type appointment.

OB/Gyn—Board eligible. Desires associate, group or solo practice. Conn. license. 42 years old. John E. Mullin, M.D., 200 North Long Beach Avenue, Freeport, New York 11520.

Ob/gyn—Board exams taken in June. FLEX. Interested in group practice. Elie N. Shuhaibar, M.D., The Western Pennsylvania Hospital, 4800 Friendship Avenue, Pittsburgh, Pennsylvania 15224.

Ophthalmologist—34 years old, New York license. Completing residency at St. Lukes Hospital, NYC. Available in September.

Ophthalmologist—34 years old. Board eligible. National Boards. Large or medium sized city desired. Group, solo, associate practice desired. Available immediately.

Ophthalmology—Board eligible. Available November 1972. Conn. license. Passed National Boards. Prefers coastal area, but a large or medium sized community in Connecticut will be considered. Solo, group or associate practice. Jean Pierre Huberman, M.D., Apt. #207, 5402 N. Nevada, Colorado Springs, Colorado 80907.

Orthopaedics—Board eligible. Available October 1972. 32 years old. Presently at Univ. of Cincinnati. Associate practice desired. Permanent visa with declaration of citizenship. S. Nayebi, M.D., 611 Lowell Ave., #23, Cincinnati, Ohio 45220.

Orthopedic Surgery—35 years old. Board eligible. Associate practice. Trained in spine and hand surgery.

Orthopedics—Board eligible. (FLEX) 32 years old. Associate position desired. Swiss trained. Residency at Mt. Sinai, New York City.

Orthopedics—Board certified. FLEX. 32 years old. Institutional appointment desired. S. G. Khrishman, M.D., 407 Genessee Street, Orlean, New York 14760.

Pathologist—Board certified. Conn. license. 33 years old. Group or associate practice desired.

Pathologist—Board eligible. 40 years old. Group or associate or institutional practice. Howard S. Zucker, M.D., 302 Avenue N. Brooklyn, New York 11230.

Pathologist—Board eligible. 49 years of age, wishes to relocate in Connecticut. Thomas R. Argiro, M.D., 201 Dakota Street, Hot Springs, South Dakota 57747.

Pathologist—Board certified. Mid 50's. Interested in computerized and semi-automated laboratory. Available September 1972. E. Clifford Heinmiller, M.D., 1126 Washburn Place West, Saginaw, Michigan 48602.

Pathologist—Available late 1972. Presently Assistant Pathologist. 37 years of age. Abdul K. Yousuf, M.D., 252 Providence Ave., Riverside, Rhode Island 02915.

Pediatrics and Pediatric Hematology—Board eligible, 37 years old. New York license. Solo or group practice. Chi-Yen Kuo, M.D., 20 St. Paul's Court, Apartment 1D, Brooklyn, New York 11226.

Pediatrics—Available 1/73. Board eligible. Currently Fellow in Ambulatory Pediatrics at University of Rochester. Conn. license.

Pediatrics—Board eligible. Available October 1972. Group or associate or institutional practice in large city. 29 years old. Southern Connecticut area desired.

Pediatrics—Board eligible. Connecticut license. Presently in practice. Seeking partnership in Connecticut.

Psychiatry—Part time position in adult and child psychiatry. Connecticut license. Guilford or shore area desired. Board certified.

Radiologist—42 years old. Fully certified by the American Board of Radiology. Eligible for a Connecticut license. G. H. Hussein, M.D., 2411 Fifth Street, Fort Lee, New Jersey 07024.

Surgery-General—National Boards. Board eligible. Group or associate practice in large or medium sized community 100 miles from New York City. 32 years of age. Available February, 1973. George A. Knaysi, Jr., M.D., 14 LeMoy Street, Fort Bragg, North Carolina 28307.

Surgery-General—Board eligible. Presently full time hospital staff. (FLEX) solo or group practice in medium sized community. Wife practicing anesthesiologist. Nestor M. Segullo, M.D., 138 Terrace Place, Brooklyn, New York 11218.

Surgery-General—Board certified. Wishes to live closer to the coast. Presently in practice. Solo, group or associate practice in large or medium sized community. Johannes Schokker, M.D., 2009 East McCarty, Jefferson City, Missouri 65101.

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Surgery—General. 33 years old. Board eligible. Available December 1972. Associate type practice. U. S. Soriano, M.D., 11042-128 Street Ste. 307, Edmonton, Alberta, Canada.

Surgery—General—Board eligible. Interested in associate type practice. (FLEX). 35 years old. Jose A. Raquel, Jr., M.D., 160-10 89th Avenue, Apartment 5-E, Jamaica, New York 11432.

Surgery—General, Board certified. 34 years old. Available September 1972. Group or associate or institutional. Brian S. Miscall, M.D., 4314 Bethel La. Road, Columbia, South Carolina 29206.

Surgery—General and vascular. Available January 1973. Board qualified. Harvey G. Clermont, Lcdr. M.C., USN, Box 11, Nav. Sta. Adak, FPO Seattle, Washington 98791.

Surgery—General: Board certified. 35 years old. Available August 1972. Group or associate or solo practice. Alexander N. Gunn, II, M.D., 63 Roundwood Road, Newton, Massachusetts 02164.

Urology—Board eligible. Presently in practice. Available in 2 or 3 months. Group or associate practice preferred. Solo practice will be considered. 35 years of age. Wishes to move back east. Harvard and Columbia trained. Southern Connecticut preferred. Albert V. Assili, M.D., 40184 San Carlos Place, Fremont, California 94538.

Urology—Board eligible. Available September 1972. Group or solo or associate practice in large or medium sized community. 33 years old. David O. Taber, Major, M.C., Chief, Urology Clinic, 130th General Hospital, APO 09696.

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Special Article

A Community Approach To The V.D. Problem: Greenwich, Connecticut

Peter A. Arturi, M.D.

The spiraling increase of venereal disease in the nation has created much comment and concern among health oriented professionals and also among the lay community. The incidence of gonorrhea has almost doubled in the past five years. Syphilis is also on the incline.

The following article will describe how one community with a population of 60,000 mustered the cooperation of several health agencies to develop a program of venereal disease education in the public, private and parochial schools and created a treatment center where patients could be seen, diagnosed and treated properly in complete confidentiality.

The concern on the part of the medical profession in Connecticut became evident in December of 1971. The Connecticut State Medical Society felt that its physician members should be making a more positive approach in trying to stem and cut back the great increase in venereal disease. The President of the State Medical Society enlisted the help of a retired pediatrician from Stamford, Connecticut, Dr. Oliver Stringfield, who had had a continuing interest in this problem. Dr. Stringfield then considered himself an "emissary" of the President of the State Society. He was charged with the task of developing a program in lower Fairfield County namely New Canaan, Darien, Stamford and Greenwich, Connecticut, which would include a venereal disease education program aimed at the age group 12 to 19 and of developing treatment areas where patients with suspected or known veneral disease might seek diagnosis and treatment and retain complete confidentiality.

In late December, 1971, Dr. Stringfield called together physicians, educators, school health officials, parents and students to a meeting at the Stamford Hospital. The above four mentioned communities were represented. He gave statistical information concerning the rapid increase in venereal disease in the nation and specifically Connecticut and presented a film called "Half a Million Teenagers". The film describes the diseases gonorrhea and syphilis and is pointed at the school teenage group. Following the presentation, Dr. Stringfield requested assistance on all local levels to develop a program to combat the increase in venereal disease.

One month following, another meeting was called of the four involved communities. This was held January 20, 1972, at the Greenwich Hospital. All four communities were represented by physicians, nurses, school health officials, educators, parents and students. Also, there were in the invited audience, members of the American Social Health Association, the Greenwich Health Association, and also a representative of the Communicable Disease Center in Atlanta, Georgia.

Dr. Stringfield presented statistical data on venereal diseases, and a showing of the "Half a Million Teenagers." A discussion was held amongst the ninety or so people assembled for this meeting and the culmination was the naming of coordinators for this program in each of the local areas to be involved—namely, Greenwich, Stamford, Darien and New Canaan.

The following discussion will describe how Greenwich developed its program of venereal disease education and treatment.

In order to proceed promptly in the Greenwich area, several organizations had to be enlisted for complete cooperation. The initial step was to ob-

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DR. PETER A. ARTURI, Emergency Room Physician, Greenwich Hospital; Attending Physician, Greenwich Hospital, Greenwich, Conn.; Immediate Past President, Greenwich Medical Society.

tain permission to present a V.D. educational program in the school system. The Superintendent of Schools was contacted and with his permission, a liaison was worked out with the Deputy Superintendent of Schools and the School Director of Health who is also the Town of Greenwich Director of Health.

As soon as the Greenwich Medical Society was given the green light to enter the schools as health educators, volunteers amongst the members of the Greenwich Medical Society were sought and twenty physicians volunteered to participate in the V.D. educational program in the schools.

Through the Executive Director of the Greenwich Health Association, a concerned agency in the community, that agency offered its cooperation in making up brochures with V.D. educational material to be used by the physician in a V.D. educational program. The Greenwich Health Association also had a copy of the previously mentioned "Half a Million Teenagers" film which it offered for use to the private and parochial schools or other private groups.

The Greenwich High School had its own film as well as the aforementioned "Half a Million Teenagers." The High School officials cooperated with the School Health Director in producing a schedule whereby the students would be given this program during an English class. Parents were notified of the program and had the option of requesting that their sons or daughters not be at the presentation. Out of 2,600 students, twelve parents stated that they did not wish their youngster to participate.

The Greenwich Hospital Association cooperated in making up transparencies with graphic representation showing that V.D. was the most prevalent reportable communicable disease, another showing the gonorrhea morbidity in Connecticut from 1960 to 1970, another showing the increase in gonorrhea in the age group 15 to 19 in Connecticut from 1959 to 1970 and the last a graphic representation of syphilis in Connecticut from 1960 to 1970 in the primary and secondary infectious state as well as the latent state. The Greenwich High also cooperated to augment copies of these transparencies. These were to be used with an overhead projector as a teaching vehicle.

The physicians, members of the Greenwich Medical Society, who had volunteered to be part of this program, were invited to view the format of the presentation—and also received orientation on the presentation as well as a brochure of V.D. educational and teaching materials.

With the excellent cooperation of the school system, the Greenwich Medical Society, the Greenwich Health Association, the School Health Director, the Department of Continuing Care at the Greenwich Hospital, the program was ready to put into action on February 7, 1972.

A presentation of the program was made to the P.T.A. Council of the Greenwich High School at which meeting the public was invited and it was the impression of the Coordinator of the program that this presentation was well received.

The presentation format was standardized in that all physicians used the same approach. Transparencies with statistical information was first on the program followed by a viewing of the film which lasted sixteen minutes. Following the film, a question and answer period was held and further statistical data could be presented at that time. The alloted time was about 64 minutes and this seemed ideal.

The program was started at the twelfth grade level and has proceeded to the eleventh grade, and tenth grade. It is projected that the program will go through the eighth grade and possibly the seventh. It was begun in the public high school but all private and parochial schools, grades eight through twelve, have been invited to participate. Thus far the response is quite encouraging.

As of this writing (April 12, 1972) approximately 60-one hour programs have been given by members of the Greenwich Medical Society. Pamphlets and a true or false quiz are distributed to the students. The acceptance on the part of the students is good and the comments by the educators and other onlookers have been encouraging. The program is now in its third month and will proceed until classes are dismissed in late May or June. It is hoped that most of the students in Greenwich schools, age 13 to 19, will be exposed to this educational program before school is closed. The local Catholic High School is to have the program as are several other private schools at their request.

The physicians who have participated in the program have been happy with its outcome thus far.

In order to complement the educational effort being made on a community level, discussion was held between the Greenwich Medical Society, Greenwich Health Association as to what could be implemented as a treatment effort. With the stimulus of the Greenwich Health Association, the cooperation of the Greenwich Hospital Association and with the services of volunteer physicians from the Greenwich Medical Society, a V.D. treatment center was developed in the outpatient department of the Greenwich Hospital. This is a privately sponsored, free clinic called the Venus Treatment Center, held daily Monday through Friday. The Greenwich Medical Society supplies the physician, the Greenwich Hospital provides the space and the nursing help, and the Greenwich Health Association underwrites the cost of the lab. studies and treatment medications. The Center opened March 13, 1972. It serves as an area where young people may go for reassurance, consultation, diagnosis and treatment of venereal disease and retain complete confidentiality with the patient.

The foregoing is only meant to show how much can be accomplished in a short period of time when all community agencies cooperate to the fullest extent in the purpose of controlling a potential health menace. The agencies and people listed in the foregoing presentation are to be congratulated for their part in developing a V.D. educational and treatment program which can act as an example for other communities.

It is not known how many communities have Medical Society sponsored and physician conducted V.D. educational school programs and it is not known how many privately sponsored, free V.D. treatment centers are present but one might predict there are few in number.

A mass effort is needed on the part of all communities to control the alarming increase of venereal disease in our nation.

The Public Health officials of the State of Connecticut have shown a great interest in the program of V.D. education as presented.

Addendum

As of June 1, 1972, the members of the Greenwich Medical Society have given 91 sessions of venereal disease education to the public schools, (grades 9-12), parochial schools, (grades 8-12), private schools and private groups.

The members of the Greenwich Medical Society have contributed 56 hours of volunteer care in the Venus Treatment Center located at the Greenwich Hospital.

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Electrocardiogram of the Month:

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Prepared by
HYMAN M. CHERNOFF, M.D.
Associate Professor of Clinical Medicine,
Yale School of Medicine
Director, Dept. of Electrocardiography
Memorial Unit, Yale-New Haven Hospital

The VPC as an Aid in Exposing Cardiac Pathology (Concluded)

In this third and concluding article of this series the occurrence of VPCs is shown to be helpful in a) demonstrating that in some patients block of conduction in a bundle branch may only be rate-related rather than permanent and b) that in these patients patterns of infarction which are masked by the presence of bundle branch block are revealed in the beat which terminates the compensatory pause which follows the VPC.

a—In the normal state sinus impulses are conducted rapidly through the branches of the Bundle of His to reach the myocardial fibers in both ventricles. Various disease states may delay or completely block conduction in one, two, or all three of the fascicles which constitute the IV conducting system. When patterns of block of conduction in one or more of these fascicles are present in a tracing, it does not necessarily imply total inability of the fascicle or fascicles to conduct impulses to the ventricle. The refractory period of a particular fascicle may only be prolonged so that it takes a longer period for it to recover its ability to transmit impulses. At heart rates below a critical level conduction along the fascicle may be normal or only slightly delayed.

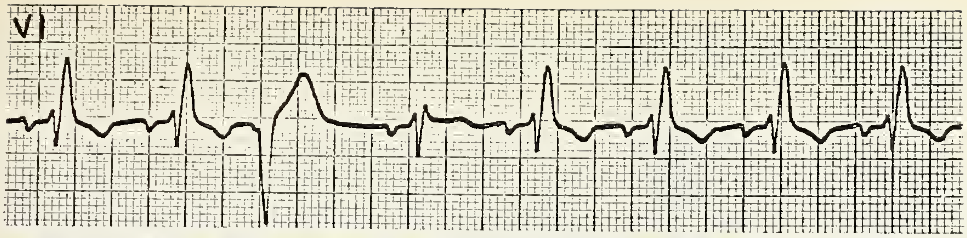
Fig. E exhibits a sinus rhythm with a rate of 94 beats per minute. The QRS complexes measure 0.14 second in duration and patterns of RBBB are present. The 3rd beat in the rhythm strip is a VPC. The first beat terminating the compensatory pause following the VPC exhibits a QRS complex of approximately 0.10 second in duration and a configuration consistent with incomplete RBBB. Since the R-R interval between the VPC and the more normally conducted sinus beat measures approximately 0.80 second the critical rate below which conduction along the right bundle branch is improved is 75 beats per minute.

Fig. F exhibits a sinus rhythm with a rate of 98 beats per minute. The QRS complexes measure 0.12 second in duration and exhibit patterns characteristics of LBB. The 5th and 7th beats in the rhythm strip are VPCs. The sinus beats which terminate the compensatory pause following each VPC are conducted in a normal manner through the ventricles. Since the R-R intervals between the VPCs and the normally conducted sinus beats measure approximately 0.84 second the critical rate below which conduction along the left bundle branch is normal is 72 beats per minute.

(continued on page 552)

FIGS.

E



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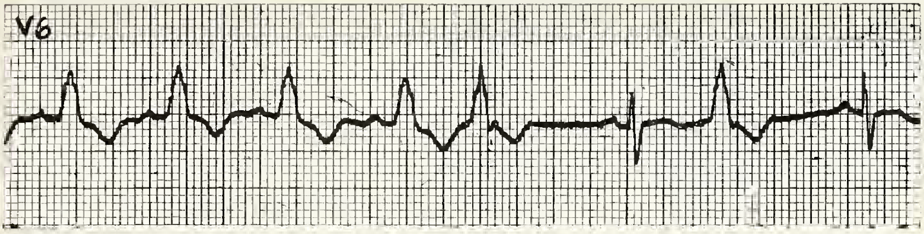

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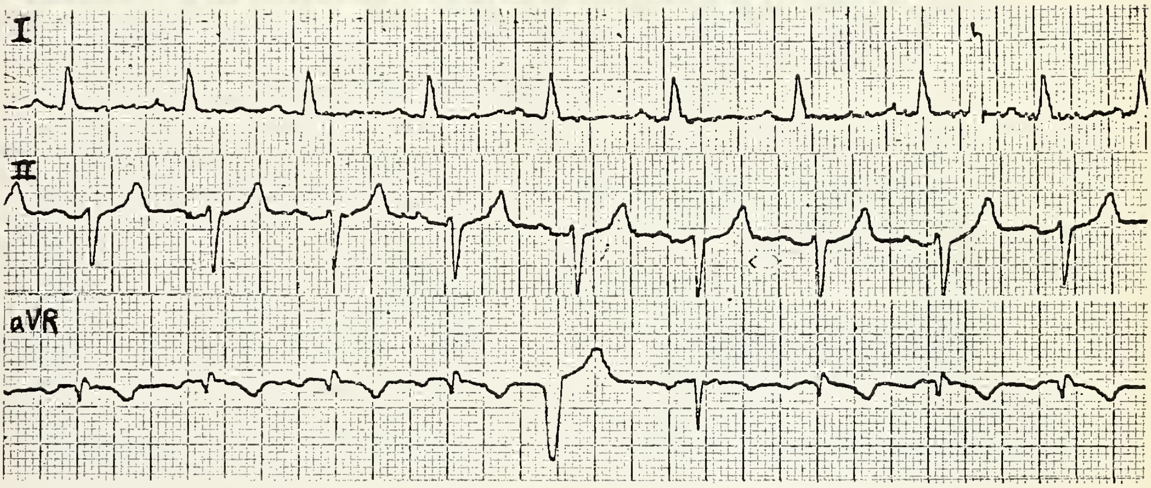

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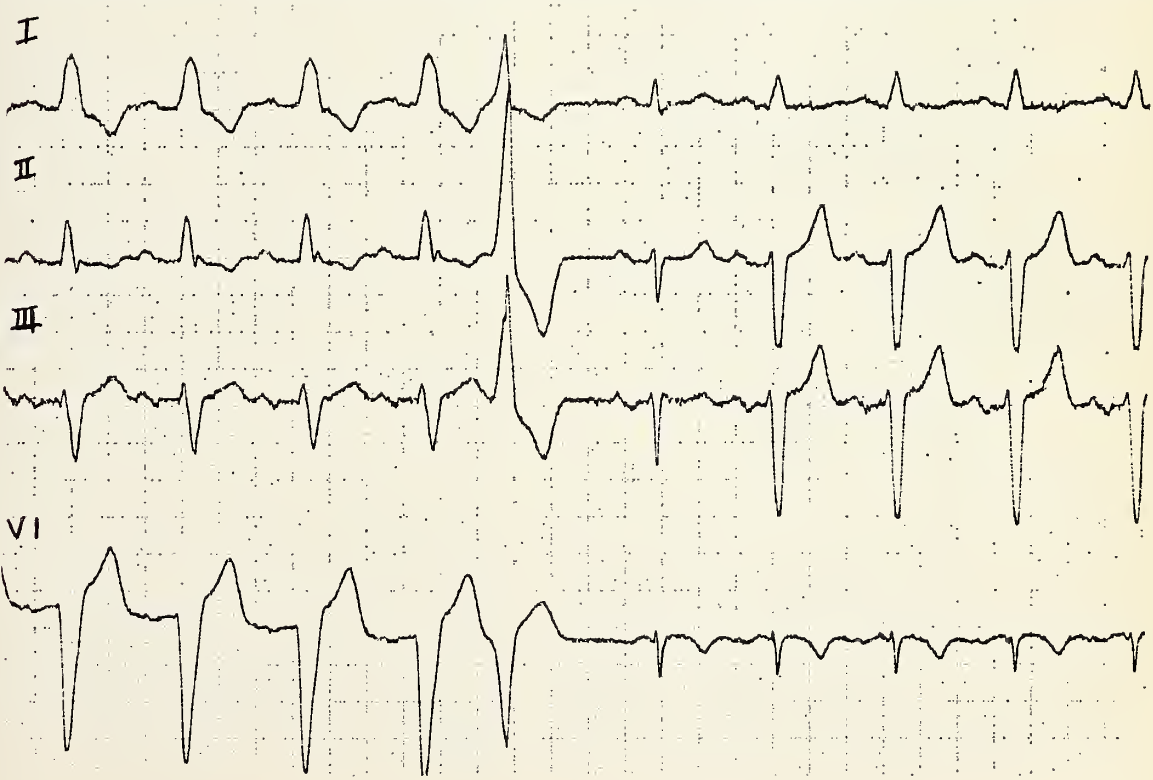

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Fig. G exhibits a sinus rhythm with rate of approximately 90 beats per minute. The QRS complexes measure 0.09 second in duration and exhibit a mean frontal QRS axis of approximately minus 60°, findings consistent with presence of left anterior hemiblock. The 5th beat in lead aVR is a VPC. The first sinus beat terminating the compensatory pause following the VPC is conducted in a normal manner to both ventricles. The last 3 beats in this lead again exhibit patterns of left anterior hemiblock. since the R-R interval between the VPC and the normally conducted sinus beat measures 0.82 second, the critical rate below which conduction along the anterior division of the left bundle branch is normal is 75 beats per minute.

b—In the presence of LBBB the patterns of a previous myocardial infarct involving the left ventricle may be completely masked. When there is block of conduction in the left bundle branch the sinus impulse is conducted initially to the right ventricle and only later reaches the left ventricle. As a consequence there usually is absence of the abnormal Q waves which are the hall-mark of past infarction. In addition the secondary T wave changes resulting from the earlier recovery of the right ventricle may completely mask the primary T wave changes associated with infarction. The occurrence of a VPC may help reveal the infarct pattern if the LBBB is rate-dependent.

Fig. H is the tracing of a patient with a history of previous infarction of the anterior septal area. The four leads shown were recorded simultaneously. The rhythm is sinus with a rate of 94 beats per minute. The first 4 sinus beats exhibit a QRS interval of 0.12 second and patterns characteristic of LBBB. The 5th beat in each lead is a VPC. The first sinus beat terminating the compensatory pause following the VPC exhibits a QRS interval of approximately 0.09 sec. and patterns consistent with left anterior hemiblock. The ventricular complex in lead V1 exhibits a qrS configuration and symmetrical inversion of the T wave, findings consistent with a previous anterior septal area infarction. The last 4 beats in each of the leads are sinus beats conducted with an increased degree of delay in the anterior division of the left bundle branch (QRS interval measures 0.10-0.11 second).

In this patient the occurrence of a VPC thus helped reveal the presence of a rate-related LBBB, the presence of varying degree of left anterior hemiblock and the presence of patterns of a previous infarct.

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Political Decisions

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EXODUS 18:21)

These words of Moses will be relevant when dawns Tuesday, November 7, 1972. This will be Election Day in America. What will you be doing on that day? What are you doing about it today? On Election Day you can demonstrate your faith in representative government as still the world's best political hope. Each time you exercise your freedom to vote you nourish that hope.

In Connecticut, as in the Nation, searching for candidates, training of workers, plotting of strategies, and collecting of funds begin immediately after the last campaign, whether it was won or lost. If you are aware of this, you recognize the candidates and understand why they were selected. If you are informed, as well as aware, you recognize critical issues and have formed logical opinions of them which you are able to discuss and defend. If you are concerned, as well as aware and informed, the candidates recognize you because you have supported them with money, time, and praise.

A large daily newspaper ran this recent headline: *"U.S. Public Found Upset But Inert."* The article quoted a man who expressed his apathy in these words: "One vote won't make any difference. Anyhow, I'm fed up with all that political jazz." *"Apathy"* is derived from the Greek *"a"* (away from) and *"pathos"* (suffering). At the root of apathy is unwillingness to suffer. But is it not worth the sacrific—even suffering—to upgrade political leadership and to influence decisions of your government?

To exercise a choice in political leadership and decisions you must offer your help to the party and candidates of your choice. Physicians' wives are considered educated and informed. Their actions and choices are observed and imitated.

Theodore Roosevelt, as well as Moses in *Exodus,* emphasized the need for persons to improve politics. He said, "It is not the man who sits by his fireplace reading his evening paper and saying how bad our politics and politicians are who will ever do anything to save us; it is the man who goes out into the rough hurly-burly of the caucus, the primary, the political meeting, and there faces his fellows on equal terms."

Moses spoke of "men" and Teddy Roosevelt of "fellows" because they lived before woman suffrage. They would be amazed at the impact of women in politics today. We contribute over eighty percent of political activity and over fifty percent of the vote. To the "hurly-burly" caucus we have brought frills and fury!

The Woman's Auxiliary to the American Medical Association has always recognized the importance of cooperative effort for good legislation. Today it is effective through AMPAC (American Medical Political Action Committee) and LEGS (Legislative Effort Group System).

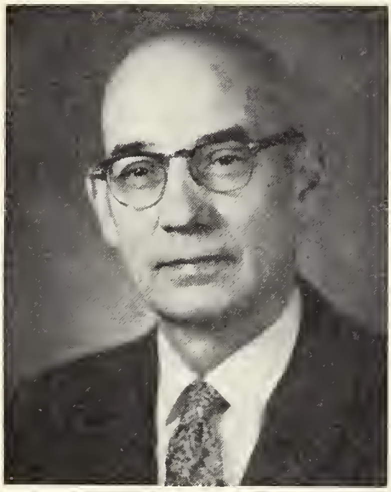
As brilliant as Autumn's flaunting of gold and orange and browns in Connecticut this year, will be the red, white, and blues of political courage decorating a thousand booths, parades, fairs, cornroasts, banquets, and buttonholes. Fly your own colors and be there!

OBITUARY

Chester A. Weed, M.D.
1917-1972

Dr. Chester A. Weed of West Hartford, Connecticut died unexpectedly at Southampton, Long Island, on August 2, 1972.

He was graduated from Peekskill Military Academy, Peekskill, New York, from Amherst College in 1938, and from Harvard University School of Medicine in 1942. He interned at Hartford Hospital and took residency training in opththalmology at Yale-New Haven Hospital and Manhattan Ear and Eye Hospital.



Dr. Weed was a Captain in the Army Medical Corps during World War II, and served in the South Pacific and the European Theater. He volunteered his services at the Christian Mission Hospital in Taxilia, West Pakistan; on the SS Hope in 1963 in Peru and again in 1965, in West Africa. For his work in the Lan Tho area of South Vietnam in 1968, he received the American Medical Association's Certificate of Humanitarian Service.

He was a member of the Staff of the Hartford Hospital, and an assistant professor of Ophthalmology at the University of Connecticut Medical School where he helped coordinate the residency program. He devised a TV magnifier for low-vision patients which received favorable comment from Dr. Louise Sloan of the Wilmer Ophthalmological Institute of the Johns Hopkins Hospital, a nationally renowned authority. The magnifier is enjoyed by the children at the Oak Hill School for the Blind. Dr. Weed was a ham radio operator and member of the American Radio Relay League; an active worker for the Congregational Church and a member of the First Church of Christ, West Hartford.

Dr. Weed was a member of the Hartford County Medical Association, Connecticut State Medical Society, American Medical Association and New England Ophthalmological Society. He was a diplomate of the American Board of Ophthalmology, a member of the American Academy of Ophthalmology and Otolarynology and the International Congress of Ophthalmology.

His death came less than four months after his elder son, Captain Jeffrey Weed, a Phantom F4 Marine pilot was reported missing off Okinawa.

Dr. Weed leaves his wife, Marjorie Pape Weed, a son, Christopher Corey of West Hartford, and a sister, Dr. Barbara Christine, of Litchfield, Connecticut.

He was a quiet, serious student of ophthalmology, enjoyed teaching it, and devoted more of his time and energy to humanitarian causes than any other ophthalmologist I know. He is "doubly dead in that he died so young."

Carl P. Bausch, M.D.

In Memoriam

Hynes, Frederick Henry, Tufts Medical School, 1913. Dr. Hynes was a practicing physician in the New Haven area for many years. He was a member of the New Haven County Medical Association, The Connecticut State Medical Society and the American Medical Association. Dr. Hynes died July 24, 1972, at the age of 82.

Wray, Edward H., Jr., Yale Medical School, 1932. Dr. Wray was a general practitioner in the Litchfield rea since 1934. He was a member of the Litchfield County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Wray died April 11, 1972, at the age of 69.

NEW BOOKS IN REVIEW

EMBRYOLOGY FOR SURGEONS: The Embryological Basis For The Treatment of Congenital Defects by S. W. Gray and J. E. Skandalakis. 1st Edition. W. B. Saunders Co. Philadelphia, London and Toronto, 1972. pp. 918.

Reviewed by: E. S. CRELIN

The binding, paper, style and size of type, black and white illustrations, and index are excellent. The authors are both Professors of Anatomy at Emory University School of Medicine. Eleven authorities edited the chapters containing the topics of their specialty.

It is a "bridge" type of book that brings together the basic aspects of abnormal development and the surgical treatment of congenital malformations. In a sense, it is neither "fish nor fowl" because it must abbreviate both the development of a defect and its treatment. The authors state that they, "do not intend this to be a book on pediatric surgery," and it is not. It is also not an embryology text. The book fulfills an awareness function. It makes the student of development aware of the surgical treatment of congenital malformations and it gives the surgeon an awareness of how a specific defect he treats came about during development. For the reader who wants a more detailed account of the development of a specific defect and/or its surgical treatment, there is an excellent "Reference" list at the end of each chapter. There is a consistent pattern for dealing with each congenital defect throughout the book i.e., anatomy, embryogenesis, history and incidence, signs and symptoms, diagnosis, treatment.

The title leads a potential reader to believe that the book is comprehensive in its coverage of human congenital defects that are surgically treatable. Actually, it starts at the neck and ends with the pelvis and excludes completely the development and surgical treatment of congenital defects of the vertebral column, head, nervous system and limbs.

REVIEW OF MEDICAL MICROBIOLOGY. Tenth Edition. Ernest Jawetz, Ph.D., M.D., Joseph L. Melnick, Ph.D., and Edward A. Adelberg, Ph.D. Lange Medical Publications, Los Altos, California, 1972. pp. 504. $8.00.

Reviewed by: BYRON H. WAKSMAN

This book has for years been used by medical students as a short cut to grasping the large and increasingly comple field which includes medical bacteriology, mycology, parasitology, virology, and basic immunology. Immunology alone, which once served as the basic science underlying immunity in infectious disease, blood banking, and clinical allergy, now serves rheumatology (autoimmune diseases), hematology, endocrinology, transplantation, and cancer, as well. Each topic mentioned here is treated briefly in this book, and it is of obvious value to students at any level of sophistication. At the same time, any one who seeks real understanding in any of these fields *must* supplement this book with other works which provide more complete coverage.

The text has been substantially updated since the previous edition, and one finds in it a reasonable presentation of recent developments in each of the areas discussed. One can easily find many small points to criticize. To pick a single example, it is unfortunate that the description of immune reactions as "immediate" or "delayed" is perpetuated, when for several years immunologists have made use of a more subtle and more meaningful classification of these reactions as neutralization, single cell (or cytotoxic), anaphylactic, immune complex, and cell-mediated. Such criticisms, however, do not impair the overall usefulness of the volume.

CLINICAL LABORATORY STATISTICS. Roy N. Barnett. Little Brown and Company. Boston. 1971, 197 pp. $14.50.

Reviewed by: COLIN WHITE

This book on statistical aspects of clinical laboratory data is written for pathologists. Although it is primarily about the use of statistical methods, it includes many incidental comments about clinical pathology itself, for example suggestions about laboratory procedures. The book will also be of interest to statisticians who work with biomedical data.

The first quarter of the book is a review of elementary statistics: definition of terms, hints about computing, probability, the normal distribution, analysis of variance, sampling and Bayesian statistics. The second, and largest, section describes the application of statistics in the clinical laboratory. It includes chapters on normal values, quality control, standardization, duplicate measurements, detection of errors, proficiency surveys, choice of analytical methods, and laboratory kits. The book concludes with two shorter sections—one on the application of statistics in patient care and one on statistics in medical literature.

The style is lively and informal, and there are several light-hearted illustrations by Virginia Simon. The informality often leads to statements that are not strictly correct, as can be illustrated from almost any chapter. For example, in Chapter 3, probability is loosely defined as the odds that an observation or event did not occur by chance alone. The author is apparently thinking of the so-called P value associated with a significance test, which is the probability that a discrepancy as large as that observed, or larger, would occur if the null hypothesis were true. This point had previously been correctly stated in Chapter 1. In a later part of Chapter 3 the same issue is discussed in relation to the interpretation of the F Test and once more the statement made is incorrect. Again, the discussion of the binomial distribution in Chapter 3 is very confusing and at several points incorrect; for example if 2 balls are drawn with replacement, from a box containing one black and one white, there is a probability of 0.5 of getting one black and one white, and not, as the author states, a probability of 0.5 of getting one black and one white twice.

The virtues of the book are its easy style and the selection of important material. The author, has brought to the clinical pathologist a simple account of problems that are of everyday occurrence, but on which there is little accessible literature.

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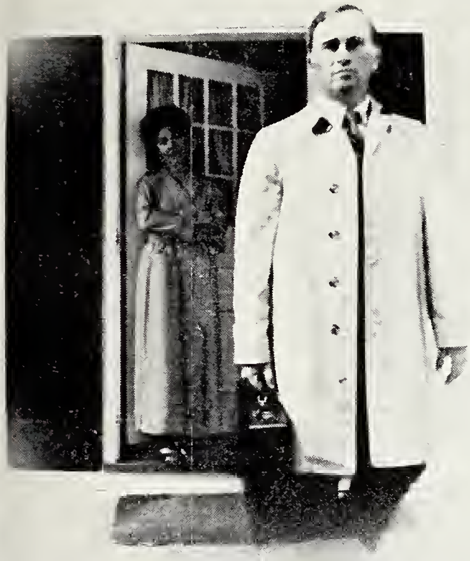

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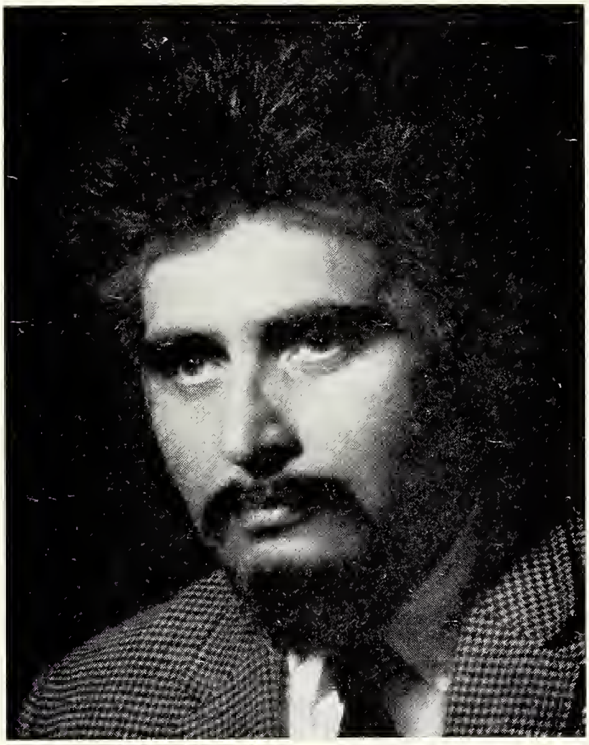
SYMPOSIUM ON HEPATIC DISORDERS

Harold O. Conn., M.D., *Guest Editor*



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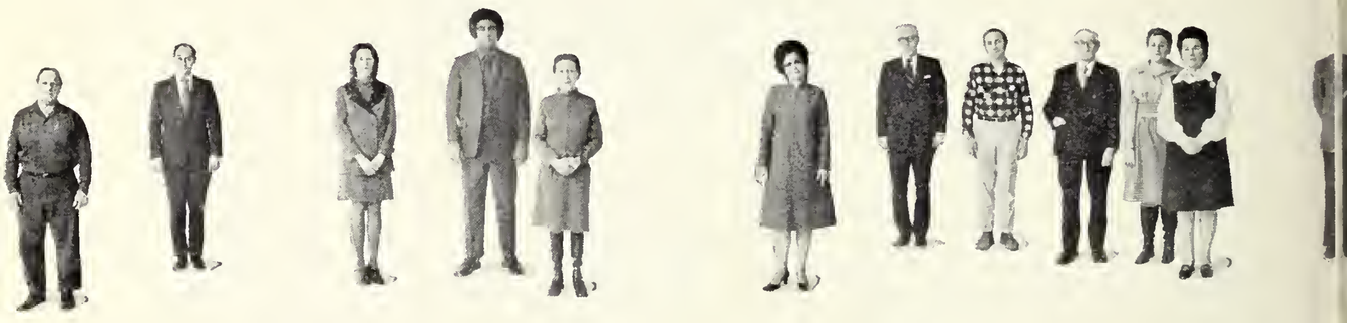

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Connecticut Medicine

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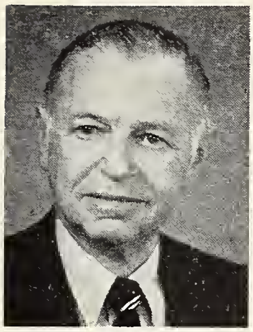

Historically, medical ethics has been a concern of physicians and has been staked out as the private domain of medicine. More recently, possibly as a spin-off of consumerism, and certainly because of the pecuniary involvement of government, and in response to societal pressures, many non-physicians have begun to manifest a growing interest in medical ethics. An extended interdisciplinary study of this subject has received funding at one university to the extent of several million dollars. An inter-faculty program in medical ethics is underway at another university with more modest private financial support. While organized medicine in this country has maintained an ongoing interest in medical ethics, it has failed to recognize the pressures alluded to above which should have led to a larger and more structured involvement. It should have taken the initiative which has now been taken by others. While we have sat back somewhat smugly, others have begun to face up to and to deal with the many profound questions which have resulted from the rapid evolutionary changes of recent years.

There are many areas in which questions have arisen, and answers to these must be sought, such as, what are the implications of medical practice for the way in which life is valued, and, for that matter, defined, by physicians and the larger society? When the physician may be both scientific researcher and healer and friend to patients, where is the line to be drawn? What ethical considerations relate to work with special groups of patients who may not be able to make their own decisions, such as children, the mentally retarded or the addicted? What moral problems are raised if doctors should seek to go on strike? What moral problems are raised by withholding training services for military personnel in time of war? What values underly the development of public policy and priorities concerning research on, and treatment of, disease? If society "cannot afford" everything medicine can provide, how do we choose, and what do we favor, for example, cancer over heart disease, or development of kidney machines over new vaccines? What are the rights of the individual or patient in human research? Should research on prisoners be permitted? These are all questions which must be seriously studied, and to which acceptable answers must be found.

The development of the field of organ transplantation has raised many ethical issues which demand study and new ground rules, not the least of which is the definition of death. Genetic engineering, a recent entry, brings with it a whole rash of ethical and moral questions. While the study of sickle cell anemia and a search for its cure is highly commendable, its prevention by genetic counseling is not without ethical and racial overtones. While cloning is not as yet achievable in humans, it has been predicted that it will be within twenty-five to fifty years. At that point in time the most profound ethical, moral and political questions will confront us. All of these questions and their answers will have tremendous effects on the quality of life, many in ways which cannot as yet be predicted, but the most intensive study must be conducted to control and guide the directions of potentially useful developments, in order to prevent possibly devastating consequences.

David A. Grendon, M.D.
President

Foreword

To Know Liver Disease....

The Symposium on Hepatic Disorders in this issue of *Connecticut Medicine,* which was conceived by and is dedicated to Dr. Louis H. Nahum, represents a series of seminars presented during the past year as part of the Training Program in Liver Disease at the West Haven Veterans Administration Hospital. Although the subjects of these seminars are ostensibly unrelated to each other, the liver is common and central to each.

Three-quarters of a century ago Osler said that to know syphilis is to know medicine. Although as true now as it was then, it is now, by virtue of the infrequency of advanced syphilitic syndromes, an irrelevant concept. Attempts to transfer the torch to other diseases, for example, to lymphoma, to collagen vascular disease or to multiple myeloma, truly a protein disease of protean manifestations, have not met with much success. Perhaps liver disease may inherit the mantle.

The liver is an organ with an infinite number of functions. Disturbances of some of these diverse duties may be reflected as clinical or laboratory manifestations of liver disease. In addition to the common clinical features of cirrhosis, for example, the complete physician or hepatologist must be aware of and concerned with, secondary disorders of the gastrointestinal tract (hemorrhage from esophageal varices, peptic ulcer), of the central nervous system (portal-systemic encephalopathy, myelopathy), of the endocrine system (diabetes, gynecomastia), of the cardiovascular system (arteriovenous anastomoses, increased cardiac output), of the respiratory system (hypoxemia, hyperventilation), of the hematologic system (hemosiderosis, hypersplenism), of the renal system (ascites, hepatorenal syndrome), of the lymphatic system (engorged thoracic duct, abnormal lymph), of the reticuloendothelial system (bacteremia, spontaneous peritonitis), of the motor system (asterixis, abdominal hernias), of the integument (spider angiomata, Muercke's lines), of blood coagulation (hypoprothrombinemia, fibrinolysis) and many others. Clearly, the liver has its cells into everything and cirrhosis is a leading contender for the title of All American Disease. No wonder the field of hepatology is emerging as a discrete sub-specialty, separate from conventional gastroenterology. It may be too much for one individual to be concerned with all these problems and to have to worry about the bowels too, or *vice versa.*

These seminars, each by recognized investigators who are actively working in these diverse fields, present current thoughts about some of these difficult areas. One deals with abnormal carbohydrate metabolism, one with impaired coagulation and its correction, one with iron storage disorders, one with drug-induced liver injury and two with the changing concepts and therapy of portal-systemic encephalopathy. We hope they will be of as great general interest and value as they are to those working in the field.

Harold O. Conn, M.D., *Guest Editor*

Iron Storage Disorders In Cirrhosis

Norman D. Grace, M.D.

In 1871, Troisier[1] described a patient with diabetes mellitus and dark skin, who at autopsy had a cirrhotic liver. No iron stains were done, but he coined the term "pigmentary cirrhosis" to describe this entity. Over the ensuing years, the classical triad of hepatic cirrhosis, diabetes mellitus, and hyperpigmentation of the skin has led to the diagnosis of hemochromatosis. In 1935, Sheldon[2] published his classic monograph, "Haemochromatosis", which gave impetus to the idea that the disease was "genetic" in nature. However, of the 311 cases reviewed by Sheldon, 70% had a history of excess alcohol intake and 41% did not have diabetes.

In recent years, there has been much debate in the literature about the relative roles of alcohol, dietary iron, and a familial tendency to increased iron absorption as the basic problem in the disease. The resulting variability in definition of the disease has led to much confusion. I would prefer the term, cirrhosis with iron overload, and find the following definition, as put forward by MacDonald,[3] quite acceptable: Portal cirrhosis with large quantities of histologically demonstrable iron in the parenchymal cells of the liver and pancreas. Iron may also be present in the Kupffer cells and bile duct epithelium of the liver and in the spleen, gastric mucosa, pituitary and myocardium. Diabetes mellitus and skin pigmentation are often present but are not essential for the diagnosis.

The above definition might include all of the following conditions:

1) Idiopathic (familial) hemochromatosis
2) Liver disease associated with certain anemias (i.e., thalassemia, sideroachrestic anemia, pyridoxine responsive anemias)
3) Liver disease associated with transfusions and/or hepatitis
4) Dietary iron overload (i.e. Bantu)
5) Iron overload following cirrhosis.

I. Idiopathic (familial) hemochromatosis

This group consists of patients with cirrhosis and increased iron stores, primarily in the hepatic parenchymal cells, in which other members of the family have been shown to have either biopsy evidence of iron overload in the liver with or without cirrhosis or a high degree of saturation of their serum iron binding capacity, increased iron absorption, or increased iron stores as estimated by desferrioxamine urinary excretion. Sheldon[2] found 14 examples where two or more members of a family were reported to have hemochromatosis in a review of the world's literature to 1935 and proposed that hemochromatosis was a genetic disease. Most of these were very poorly documented. MacDonald,[3] some thirty years later, found 49 reports of familial hemochromatosis, totaling 100 families in which two or more members have been said to have increased tissue iron. Among the 100, there was histologic proof of tissue iron in only 32. Only 10 of these meet the histologic criteria for the diagnosis of hemochromatosis.

Should patients with a history of excess alcohol intake be excluded from this category? As previously mentioned, there is a strong, perhaps coincidental, relationship between excess alcohol intake and the reported cases of "familial" hemochromatosis. How does one distinguish the alcoholic with cirrhosis who secondarily accumulates increased iron stores from the "familial hemochromatotic" who happens to drink too much? Some investigators have approached this problem by subjecting all such patients to periodic phlebotomy to deplete the hepatic iron stores. They reason that the patients with massive iron stores (i.e. greater than 10 grams of iron) would fall into the latter category (familial hemochromatosis) while those whose iron stores were readily depleted by removing a few units of blood would fit the former group. However, the range of iron stores in these patients is wide, and the data to support such an arbitrary division is lacking.

Does this mean that the "familial hemochromatotic" does not exist? He probably does, since there are now several reports of families with histologic evidence of cirrhosis with iron overload, in whom no history of increased alcohol intake could be obtained. However, the number of patients reported fitting this requirement is certainly less than 5% of all patients with iron overload. In this group of patients the excess iron accumulates first and

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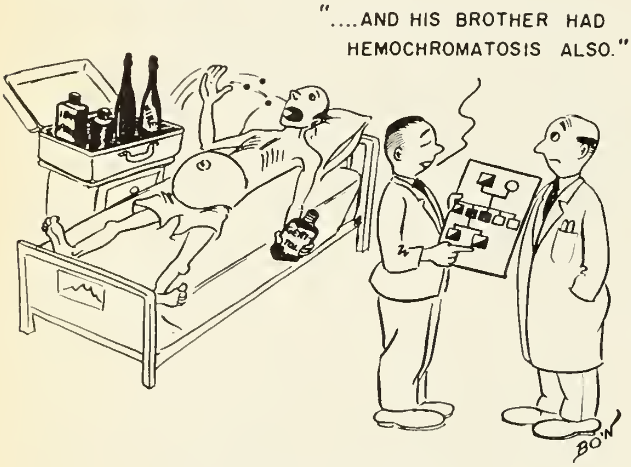
the tissue damage is supposed to follow. There is no report in the world's literature where a patient has been shown to have increased iron stores and a family history of the disease who has then been followed by serial biopsy or other means and demonstrated to "develop" cirrhosis. Secondly, there is no good experimental model where iron given in less than lethal doses causes cirrhosis. This only occurs when the iron is given with something else, like a choline deficient diet, that will by itself cause liver damage.


"....AND HIS BROTHER HAD HEMOCHROMATOSIS ALSO."
BO'N

"Acquired or Genetic Disease?"

II. Liver Disease Associated with Anemia

Several types of anemia have decreased red cell production and normal or increased iron absorption.[4-8] The inability to make red cells leads to the unutilized iron being stored in the liver and other tissues. Usually, this results in hemosiderosis, rather than a cirrhotogenic process. However, some clinical evidence to support the concept that iron is toxic to the liver and leads to cirrhosis are a few patients with thalassemia who were noted to have increased iron stores and no liver damage and, in follow-up with repeat liver biopsies, were found to develop cirrhosis.[5-6]

III. Transfusion Iron Overload

There are many examples of patients who receive up to 60-70 units of blood during their lifetime for anemias not associated with blood loss. Most of these patients will have significantly increased stores of iron, primarily in the reticuloendothelial system (spleen, Kupffer cells), but some is redistributed to the parenchymal cells of the liver. However, only a small percentage of these patients develops cirrhosis. It is possible that the development of cirrhosis in this group of patients may be more related to post-transfusion serum hepatitis than to the increased iron stores. Further studies are needed to clarify the pathogenesis of cirrhosis in these patients.

IV. Iron Overload in the Bantu

Because of interest in the possible pathogenetic relationship between iron overload and cirrhosis, much attention has been paid in the last decade to the Bantu in South Africa. This group of patients represents a classic example of dietary iron overload derived from cooking with iron utensils and consumption of an alcoholic drink, Kaffir beer, which is brewed in wrought iron vats and has a high iron content. The dietary intake of iron may be as high as 200 mg. per day, and autopsy studies have shown that the liver contains as much as 8 gms. of iron per 100 gm. dry weight.[9] The controversy revolves around the cause of cirrhosis; do increased deposits of iron lead to tissue damage and cirrhosis, or is the cirrhosis due to other causes such as alcohol or hepatitis? Although the pathologic picture in those patients with cirrhosis shows only minor differences from idiopathic hemochromatosis, many of the patients do not have evidence of hepatic damage despite markedly increased iron stores.[10]

V. Iron Overload in Cirrhosis

The last category consists of a group of patients who have cirrhosis and secondarily develop increased hepatic iron stores. Much of the information in this group has been obtained from patients with alcoholic liver disease.

Incidence

If neutral buffered formalin is used as a fixative, as many as 67% of patients with cirrhosis will have stainable iron in their livers.[11] However, when chemical measurements of autopsy specimens are made of the total hepatic iron content in these patients, the amounts of iron are no greater than found in a comparable general hospital population. Over the last six years at the Lemuel Shattuck Hospital, we have done iron stains on all liver biopsies and have found that approximately 5% of patients with cirrhosis have stainable iron pigment in at least 10% of their hepatic parenchymal cells.

Pathogenesis

Approximately 35% of patients with alcoholic or non-alcoholic liver disease have been shown to have increased iron absorption when their iron stores were not deficient.[12,13] The following factors have been implicated as contributing to this increase in absorption:

1) Dietary factors (wine, iron pills)[2,14]
2) Alcohol[15-17]
3) Pancreatic insufficiency[18]
4) Folic acid, B^{12} deficiency[7,8]
5) Post-portacaval shunt[19,20]

1) Dietary Factors

The majority of patients with Laennec's cirrhosis have a mild degree of anemia. Many of these are placed on oral iron therapy by their physicians. As a group, these patients are not the most reliable in returning to their physicians for follow-up care. We have had several such patients who have taken iron for years without re-evaluation by their physicians, who then return and have liver biopsies that show the hepatic parenchymal cells loaded with iron positive pigment in addition to cirrhosis. Although we have attributed the cirrhosis in these patients to increased alcohol consumption, there is certainly a possibility that the increased iron content in the liver may have augmented the cirrhotogenic process.

MacDonald,[3] who considers all types of hemochromatosis to be acquired, has suggested that the high iron content of some alcoholic drinks may contribute to increased iron stores. He has measured the iron content of beverages from all over the world. The highest iron content was found in Rumanian wines, with Italian and Portugese wines next. The U.S. wines had the lowest iron content of the group.

2) Alcohol

Some observers have suggested that alcohol per se may enhance iron absorption and lead to increased iron deposition in the liver, independent of the amount of iron contained in the beverage. Charlton[15] found that alcohol increased the absorption of ferric iron in normal subjects but did not affect the absorption of ferrous iron or hemoglobin iron. He could not reproduce the effect in patients with histamine-fast achlorhydria. He concluded that alcohol must be stimulating the release of HCl acid from the stomach and solubilizing the ferric iron, thus making it available for absorption in the duodenum. Tapper[16] found that ethanol treatment of the rat did not increase absorption of ferrous iron despite the induction of a fatty liver. Finally, recent studies from Sweden[17] have shown that hepatic iron stores are actually slightly diminished in chronic alcohol consumers without cirrhosis, as measured both by chemical analysis of liver biopsy specimens and the desferrioxamine excretion test.

3) Pancreatic Insufficiency

Taylor[21] in 1935 and Kinney[22] in 1950 showed that ligation of the pancreatic duct in cats and dogs resulted in increased hepatic stores of iron. When Kinney then fed raw pancreatic extract to a group of dogs with the duct ligated, the hepatic iron stores were reduced.

More recently, several studies[23-25] have shown that both patients with chronic pancreatitis and patients with cystic fibrosis involving the pancreas have increased absorption of iron salts and hemoglobin iron. Furthermore, when pancreatic extracts were given to these patients, the absorption of iron was reduced.[24,26]

On the other hand, Murray failed to show increased absorption of iron (given as Fe^{59} ferrous citrate) in rats with pancreatic duct ligation[27] or reduction of iron (Fe^{59} citrate) absorption in iron deficient rats fed pancreatic supplements.[28] Deller[29] showed that pancreatic supplements did not reduce inorganic iron absorption in normal subjects, although he did demonstrate some decrease in absorption in patients with chronic pancreatitis and cirrhosis. Finally, although patients with pancreatic cystic fibrosis demonstrate increased iron absorption, Longnecker[30] was unable to show any great increase in hepatic iron stores.

In summary, the bulk of available data suggests that there is a relationship betwen diminished pancreatic exocrine function and enhanced iron absorption. Two possible inhibitory factors in pancreatic juice may be 1) a protein or polypeptide that binds iron, rendering it unavailable for absorption because of the high molecular weight of the complex or 2) bicarbonate which may decrease iron absorption by rendering it insoluble in a more alkaline solution. There is evidence in the literature to suggest that both factors may play a role. Studies[31] in our laboratory have shown that iron forms a soluble macromolecular complex with pancreatic extract of a M.W. between 500,000 and 1,000,000. Pancreatic extract has been shown to inhibit transport of iron across everted gut sacs. The addition of Na bicarbonate, either exogenously or endogenously via secretin stimulation, has been shown to decrease iron absorption in normal guinea pigs.[32]

4) Folic acid, B^{12} Deficiency

These vitamin deficiencies, particularly folic acid[8] in the alcoholic, have been associated with increased iron absorption and accumulation.

5) Post-Portacaval Shunt

Increased iron absorption and iron deposition has been reported following construction of a portacaval shunt in patients with cirrhosis.[19] Conn[20] has shown that in a prospective study of patients undergoing prophylactic portacaval shunt in which half the patients were randomly assigned to a control group, the patients undergoing shunt surgery accumulated significantly greater iron stores in the liver than the control group. Similar results were found when he analyzed the patients not in this study who were shunted for other reasons. Studies on both rats[33] and dogs[34] have shown an association between the creation of a portacaval shunt and the subsequent increase in hepatic iron stores over a period of time.

Hepatic iron overload has also been reported in cirrhotics in whom considerable spontaneous shunting of portal blood has been demonstrated.[35] The association between shunting of portal blood and increased hepatic iron stores may reflect hepatic hypoxia or result from increased arterial perfusion of the liver, both of which have been shown to favor iron uptake by hepatocytes. This may in turn lead to increased iron absorption.

Other factors such as a gastric substance called gastroferrin have been associated with intestinal regulation of iron absorption, but space does not permit full discussion of these.

Treatment

There are numerous case reports where patients with "familial hemochromatosis" have been depleted of their excess iron stores by periodic phlebotomy and have improved in terms of their liver function tests, their insulin requirements and the general state of wellbeing.[36] However, the only attempt at evaluating this treatment in a "controlled" fashion was made by Williams,[37] who recently compared 40 patients with hemochromatosis who received phlebotomy therapy to a group of 18 "untreated" patients. This study suffers in that it was retrospective, comparing patients from different time periods in whom there were some basic differences initially. For example, 16 of the 18 untreated patients (89%) had clinical diabetes while only 26/40 (65%) of the phlebotomy group were diabetic. However, the report does have value in the careful documentation of the follow-up of these patients. The mean survival for the phlebotomy group was 8.2 years while the untreated group had a mean survival of 4.9 years. The treatment group demonstrated an improvement in liver function, a decrease in liver size, a decrease in skin pigmentation, and an improvement in their diabetes. There was no difference between the two groups in estimation of gonadal function or hepatic histology as evaluated by serial liver biopsies.

If the treatment of familial hemochromatosis is removal of iron stores by phlebotomy, should the same treatment be applied to the patient who has cirrhosis and secondary iron overload? If increased deposits of iron in the hepatic cells are harmful to the former, they might also be harmful to the latter. From a review of the literature and personal communications, we have been unable to find an answer or even a strong opinion, based on the available information. In 1965, a prospective study was begun at the Lemuel Shattuck Hospital in which patients with alcoholic cirrhosis, with liver biopsies showing greater than 10% of the hepatic parenchymal cells containing stainable iron pigment, were randomly assigned to a group in which iron stores were depleted by repeated phlebotomy or to a group in whom similar medical therapy was pursued with the exception of phlebotomy.

In a progress report,[38] depletion of hepatic iron stores by repeated phlebotomy has not been shown to influence post-randomization morbidity or survival.

Conclusion

Variable clinical, laboratory and pathological criteria are applied to diagnose hemochromatosis. These variable criteria plus the high incidence of alcoholism in the reported cases have served to confuse the reader as to the etiology, pathogenesis and natural history of this syndrome. The role of iron in producing liver disease and the place of phlebotomy in its treatment are unresolved. Some answers to these problems may come from the analysis of prospective, randomized controlled trials of phlebotomy therapy to deplete hepatic iron stores in these patients.

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An Annotated Classification Of Hepatotoxicity

Hyman J. Zimmerman, M.D.

Drug-induced hepatic injury has become a problem of major clinical importance. While it accounts for less than 5% of cases of jaundice admitted to general hospitals,[1] it is responsible for about one-fourth of the patients with acute hepatic failure.[2] Most of the instances of drug-induced acute hepatic failure are due to halothane jaundice.[3] Other forms of drug-induced hepatic disease that have attracted attention recently include those due to hydrazine derivatives (isoniazid, iproniazid), antimetabolites (methotrexate), antibiotics (tetracyclines) and psychopharmacologic agents (chlorpromazine).[4]

The great susceptibility of the liver to damage by chemical agents is presumably a consequence of its primary role in the metabolism of foreign substances, the high concentration of foreign chemicals in its tissues, and perhaps, its position as a portal to the body for ingested substances.

The ability of the liver to transform foreign chemicals can be modified to a remarkable degree by exposure to a variety of chemical agents. Administration of phenobarbitol, phenothiazines, insecticides, and other substances enhances the ability of the liver to metabolize a variety of compounds. This enhancement is accompanied by an increase in endoplasmic reticulum and the activity of drug-metabolizing enzymes.[5]

Intrinsic hepatotoxins appear to fall into two subcategories, *direct* and *indirect.* (Table 2). *Direct* hepatotoxins are protoplasmic poisons able to injure many tissues, particularly the liver. They disrupt all elements of the hepatocyte including the endoplasmic reticulum, mitochondria, lysozomes and plasma membrane, and, indeed, lead to almost immediate, destructive, intracellular chaos. *Indirect* hepatotoxins are antimetabolites or related compounds with produce hepatic injury by the diversion or competitive inhibition of essential metabolites or by other forms of interference with specific metabolic or secretory processes of the cell. Indirect hepatotoxins cripple the metabolic organization selectively, by interference with a *specific* pathway.

Agents that depend on *host idiosyncracy* to produce hepatic injury are of two types. The liver injury induced by some drugs after a fixed latent period is accompanied by a number of features and occurs under circumstances that suggest hypersensitivity, i.e., drug allergy, in which the responsible drug is assumed to act as haptene. The liver damage induced by some agents in uniquely susceptible individuals, after a variable latent period and unaccompanied by ancillary evidence for hypersensitivity, may be deduced to be the result of some other mechanism, perhaps a metabolic aberration of the idiosyncratic patient permitting the accumulation of hepatotoxic metabolites.

The modification of foreign compounds by the liver serves primarily to convert non-polar substances to polar compounds and so permit their ex-

TABLE 2

CATEGORIES OF INTRINSIC HEPATOTOXINS

					Type Injury		
	Incidence	*Latent Period*	*Experimental Reproducibility Dependent*	*Dose*	*Organ*	*Hepatocyte*	*Type of Agent*
Direct	High	Very Short	+	+	Liver Kidney CNS Gi etc	All Parts Cell	Protoplasmic Poison (e.g. CCl_4, P)
Indirect	High	Short	(+ Variable	+	Liver Only + Other to Less Degree	Selective To Certain Portions or Pathways	Antimetabolite or Related Compound (e.g. Ethionine)

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cretion in the bile or urine. The biotransformation may also serve to detoxify potentially toxic substances. It may, however, convert non-toxic or slightly toxic agents to more toxic products, a phenomenon of importance in the mechanism of CCl_4 hepatotoxicity. Furthermore, conversion of a non-toxic drug to a toxic metabolite may occur only in individuals with an aberrant metabolic pathway and may so account for some instances of drug-induced hepatotoxicity as an idiosyncratic phenomenon.

Classification of Hepatotoxic Agents

A wide variety of chemical and biologic agents can damage the liver. These can be classified according to the presumed mechanism of toxicity, the type of hepatic injury produced or the circumstances under which exposure occurs (Table 1).[4]

TABLE 1

BASIS FOR CONSIDERATION OF HEPATOTOXICITY

- I. According to Mechanism
  - A. Intrinsic Hepatotoxins
  - B. Idiosyncratic Host
- II. According to Character of Hepatic Injury
  - A. Cytotoxic
  - B. Cholestatic
  - C. Mixed
- III. According to Circumstances of Exposure
  - A. Toxicologic
  - B. Iatrogenic

There is general agreement that the mechanisms by which chemical agents produce hepatic injury include two broad categories. On group consists of agents that are intrinsically hepatotoxic, the other consists of agents that depend on host idiosyncracy for the production of liver damage. Intrinsically hepatotoxic agents can be recognized by the high incidence of toxicity in exposed individuals, its reproducibility in experimental animals, the brief latent period between exposure and the development of hepatic injury and the dosedependence of the phenomenon. Agents that produce hepatic injury in a small proportion of exposed individuals, not related to dose, not experimentally reproducible and observed after a long latent period are recognized to depend on idiosyncracy of the host rather than intrinsic toxicity of the agent.

Type of Hepatic Injury

The type of *hepatic injury* produced by chemical agents also falls into several categories (Table 3). One form termed *cytotoxic* or *hepatocellular* is characterized by necrosis or degeneration of the hepatic parenchyma. The other, usually referred to as *cholestatic* is characterized by arrested bile flow and jaundice but by sparing of the hepatic parenchyma. The hepatic damage produced by many drugs characteristically includes elements of both and is referred to as *mixed.*

The cytotoxic form of chemical hepatic injury includes a number of lesions. Necrosis may be zonal, diffuse or massive; steatosis may be present, as may combinations of necrosis and steatosis. Cholestatic injury may be "bland", i.e., manifested only by bile stasis without inflammatory changes in the liver, (e.g. methyltestosterone or it may be accompanied by an impressive portal area inflammation (e.g. erythromycin estolate).

The clinical and biochemical manifestation of hepatic injury can be related to the histologic ones. Necrosis induced by drugs leads to a viral hepatitis-like syndrome with high levels of serum GOT and GPT, relatively slight elevations of alkaline phosphatase and a tendency to develop fulminant hepatic failure. The steatosis produced by tetracycline toxicity resembles that of fatty liver of pregnancy histologically, and when severe, clinically and biochemically. Like the fatty liver of preg-

TABLE 3

TYPES OF HEPATIC INJURY

Histologic Lesion		*Biochemical Abnormalities*			
		SGOT &SGPT	*ALK. PHOS.*	*THYMOL TURB. & CEPH FLOCC.*	*E.G.*
I. Cytotoxic	Necrosis—Zonal	↑↑↑↑	↑	±	CCl_4
	Necrosis—Diffuse	↑↑↑↑	↑	↑↑	Iproniazid
		↑↑	±	±	Tetracycline
II. Cholestatic					
A. With Portal Inflammation		↑↑	↑↑↑↑	–	Erythromycin;
B. Without Portal Inflammation		↑↑	±	–	Chlorpromazine
III. Mixed	Mixture of Cytotoxic and Cholestatic	↑–↑↑↑↑	↑–↑↑↑	––↑↑	Methyltestosterone Sulfonamides

TABLE 4

CHARACTERISTICS OF VARIOUS TYPES OF HEPATOTOXIC AGENTS

Classification	*Mechanism*	*Histologic Lesion*	*Incidence*	*Characteristics* *Experimental Repro-ducibility*	*Latent Period*	*Dose Dependent*	*Examples*
Intrinsic Hepatotoxins							
Direct	Protoplasmic Poison-membrane injury	Zonal necrosis and steatosis	High	+	Very short (hours)	+	CCl_4, tannic acid
Indirect							
Cytotoxic	Interference with metabolic pathway	Steatosis or necrosis	High	+	Short (days)	+	Tetracycline, urethane
Cholestatic	Selective interference with bile secretion	Bile casts	High	+	Short (days)	+	Methyl testosterone, mestranol, norethyndrol
Host idiosyncracy							
Hypersensitivity	Drug Allergy	Cholestasis, or both	Low	−	Consistent, long (1-4 weeks)	−	Sulfonamides, PAS, chlorpromazine
Metabolic Abnormality	Accumulation of toxic metabolites	necrosis	Low	−	Variable	±	Iproniazid, cinchophen, isoniazid

nancy it may lead to the syndrome of hepatic failure.

Cholestatic injury resembles extrahepatic obstructive jaundice in its manifestations. Transaminase elevations are relatively slight (usually under 300 Karman Units). Alkaline phosphatase levels are relatively high (more than three-fold elevated) in the cholestatic jaundice associated with portal inflammation (*hepatocanalicular* jaundice). Alkaline phosphatase levels are more modestly elevated in "bland" cholestasis (*canalicular* jaundice).

Some drugs produce a mixed pattern of hepatic injury, that includes both cytotoxic and cholestatic features. Chlorpromazine jaundice, for example, is characterized by cholestatic jaundice, but evidence of parenchymal injury is often present. The hepatic injury induced by paraminosalicylic acid is mainly cytotoxic with generalized parenchymal degeneration and necrosis but sometimes prominent cholestasis occurs.

The type of injury produced by adverse reaction to a drug has an important bearing on the prognosis. The more prominent the hepatocellular type of injury, the more likely is the syndrome of hepatic failure and a fatal outcome as in halothane jaundice. In the cytotoxic form of drug-induced injury the mortality rate has been estimated to be 10 to 50%. The more cholestatic the injury and the less prominent the parenchymal injury, the better the prognosis. The mortality rate is less than 1% in cholestatic drug-induced jaundice.

Overall Classification

Consideration of both mechanism and of the type of hepatic injury permits comprehensive classification (table 4). All direct hepatotoxins produce zonal necrosis, steatosis or both. Indirect hepatotoxins consist of two categories, one cytotoxic the other cholestatic. Agents that depend on host idiosyncracy also may be cytotoxic or cholestatic or produce a *mixed* pattern of cytotoxic and cholestatic injury.

Circumstances of Exposure

An additional facet relevant to the classification of hepatotoxic agents relates to circumstances of exposure. Hepatotoxicity may result from accidental exposure to a variety of agents in industrial or domestic setting. The most prominent industrial hepatotoxins are chlorinated hydrocarbons, nitrosamine derivatives, and, formerly, inorganic phosphorous and trinitrotoluene.

Hepatotoxins encountered in a domestic setting include CCl_4 or inorganic phosphorous as the result of carelessness, or suicidal intent, or the ingestion of food contaminated with chemicals ("Epping" jaundice) or botanical hepatotoxins. Aflatoxin, senecio alkaloids, cycasin, and toxins of poisonous mushrooms are examples of hepatotoxic agents of fungal and other plant origin.

These industrial and domestic toxins are almost all categorizable as *direct* or *indirect cytotoxic* hepatotoxins. The chemical responsible for the cholestatic "Epping" jaundice (4′4-diaminodiphenylmethane) may be categorized as an *indirect, cholestatic* toxin.

Iatrogenic hepatotoxicity may also be viewed from the standpoint of the clinical circumstances of exposure. It rarely involves direct hepatotoxins, since they are readily recognized and clinical use. The use of CCl_4 as a vermifuge and of choloroform as an anesthetic has been virtually abandoned. Tannic acid, was removed from the regimen of burn treatment and, more recently, was deleted from barium sulafte preparations used for colon radiography, when its ability to produce hepatic necrosis in these circumstances was recognized.

A number of therapeutic agents appear to be categorizable as *indirect* hepatotoxins. For example antimetabolites and related compounds used in the treatment of neoplastic, metabolic and infectious disease have properties of indirect cytotoxic agents. These includes urethane, 6-merchaptopurine, methotrexate and tetracycline in large doses.

An interesting relationship may be discerned between the clinical setting of iatrogenic hepatic injury and the type of lesions produced. The "tranquilizer" drugs (chlorpromazine, chlordiazeperoxide) tend to produce cholestasis, while the hydrazine-derived psychomotor stimulants (iproniazid, pheniprazine) produce the cytotoxic type of injury. It is of interest that the hydrazine derivatives used in the treatment of tuberculosis (isonicotinic acid hydrazide pyrazinamide, ethionancide all produce cytotoxic injury. While the basis for offering such generalizations remains limited, the apearance of such general relationships between the type of hepatic injury and the therapeutic role of a drug may provide helpful clues to mechanisms of injury.

This classification undoubtedly will require many revisions, as more is learned about the nature of the various forms of chemical hepatic injury. The changes, we believe, will lead to a more rather than less elaborate classification. There seems little doubt that the differences between the lesions of direct hepatotoxins that cause only steatosis (inorganic phosphorous), zonal necrosis (thioacetamide) or zonal necrosis and steatosis (CCl_4) reflect differences in mechanism of injury. Similarly, among the agents classified as indirect, cytotoxic hepatotoxins there are several different forms of injury. Furthermore, the variable susceptibility of different individuals or species to agents considered to be indirect hepatotoxins may permit recognition of additional mechanism. It may also be predicted, that among the drugs that produce injury as a manifestation of host idiosyncracy, there will be a number of categories relating to the role of the agent or its metabolites and to possible interactions between immune mechanisms and hepatotoxicity of the toxic agent.

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Gluconeogenesis In Liver Disease

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Inevitably carbohydrate metabolism must be disturbed in liver disease but the effects of this on total body fuel homeostasis are uncertain. Bernard[1] emphasized the role of the liver in disposing of oral glucose loads while Naunyn[2] first described "hepatogenous diabetes" in which cirrhosis, usually alcoholic, was associated with mild diabetes. Since then there have been many reports of glucose intolerance and more recently of hyperinsulinism in liver disease, mainly associated with cirrhosis,[3] while hypoinsulinism has been found in active chronic hepatitis[4] and acute viral hepatitis.[5]

Most studies have concentrated on the response of the liver to exogenous glucose loads and there has been less emphasis on the role of the liver as a gluconeogenic organ. The liver and kidney are the major organs responsible for glucose production, with the liver predominant. In normal man splanchnic glucose production is of the order of 233g/day with kidney making a much smaller contribution.[6] However, after 5 to 6 weeks starvation production drops to 66g/day with the kidney contributing almost half.[7]

The compensatory role of the kidney in the acute situation is doubtful; for example, hepatectomy in dogs leads rapidly to hypoglycaemia.[8] It might be expected that reduction in number or functional capacity of hepatocytes in humans would be associated with fasting hypoglycaemia. In general this has been reported only in severe terminal or preterminal liver disease such as acute hepatic necrosis, toxic necrosis of the liver and kwashiorkor.[3]

Fasting hypoglycaemia is also seen in several inborn errors of metabolism. In hereditary fructose intolerance there is a deficiency of fructose-1-phosphate aldolase so that after ingestion of fructose there is a rapid increase in fructose-1-phosphate concentration.[9] Intracellular phosphate is grossly depleted with probable consequent ATP depletion and inhibition of gluconeogenesis at the stage of fructose 1, 6-diphosphate formation. This hypothesis might also explain the hypoglycaemia of galactosaemia where galactose-1-phosphate accumulates in the liver. Acute alcoholic poisoning may also result in hypoglycaemia through disruption of the normal availability and interconversion of NADH and NAD.

In none of these cases is there necessarily any morphological correlate and in acute alcoholism the biochemical changes are reversible. The relative lack of fasting hypoglycaemia in other hepatic diseases need not necessarily imply normal glucose production by the liver. An overnight fast is a relatively mild challenge and in normal man it does not totally deplete hepatic glycogen, while, additionally, it is difficult to assess how much the kidneys and small intestine can compensate for a hepatic deficit. Hepatic glucose output is derived from glycogenolysis and gluconeogenesis. On average hepatic glycogen can provide only 280 K cal[10] so that gluconeogenesis must account for considerable glucose output in the fasted state. This comes primarily from lactate, recycled through the Cori cycle (about 15-25% of total glucose turnover), amino acids, primarily alanine, and glycerol (Fig. 1). Myers in 1950[11] showed that splanchnic glucose production after overnight fasting was reduced by 25% in patients with cirrhosis, and this includes a possible small intestine contribution to glucose output.

More recently Felig, and associates[12] have carried out a careful prospective study of gluconeogenesis in acute viral hepatitis. They found plasma glucose

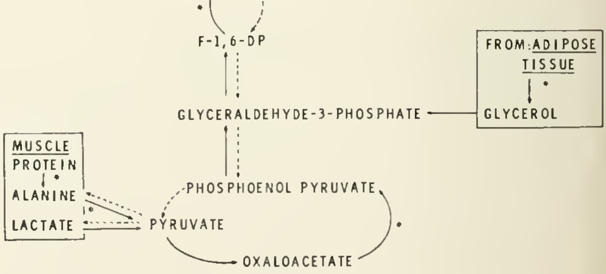

Figure 1

Pathway for gluconeogenesis. The solid lines show main gluconeogenic steps.

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concentrations of less than 60 mg% in 8 of 15 patients after an overnight fast, and these were not due to increases in plasma insulin. On glucagon stimulation there was a 69% decrease in peak glucose response which was not improved by a prior high carbohydrate diet and implies a marked reduction in hepatic glycogen synthesis, as has also been found in cirrhosis.[13] Fasting concentrations of several amino acids were elevated while after glucagon there was little or no change in their concentration compared with the normal state where the glucogenic amino acids, in particular, showed profound falls. This suggested that in viral hepatitis the amino acid gluconeogenic precursors were not being taken up by the liver.

Apart from amino acids, lactate and glycerol are the major glucose precursors. Elevated concentrations of both these metabolites have been reported in liver disease.[14]

In our own patients we have found raised venous blood lactate values in 35% of a group with a broad spectrum of liver disease (Fig. 2). Values more than twice normal were encountered only in patients with severe liver disease while milder elevations bore less relation to clinical state. The increase in lactate is open to several interpretations. Production could be enhanced or clearance by liver or other tissues could be reduced. The same holds for blood glycerol, elevated values being found in more than half of our patients.

It is known that after an intravenous or oral glucose load blood lactate concentration rises.[15] Using the intravenous glucose tolerance test (0.5 g/kg body wt) we have found a mean rise of 0.42 mM from a fasting value of 0.72 mM in normal subjects. This rise is accentuated with a delay in subsequent fall in many patients with liver disease, even those with impaired glucose tolerance in whom in might be predicted that peripheral (muscle) production would be reduced, so that reduced hepatic clearance seems likely. The enhanced rise is commoner in patients with cirrhosis than those with non-cirrhotic liver disease (fig. 3). Changes in pyruvate parallel these changes in lactate. Pyruvate is present in blood in only one-tenth the concentration of lactate but is in equilibrium with lactate. Raised

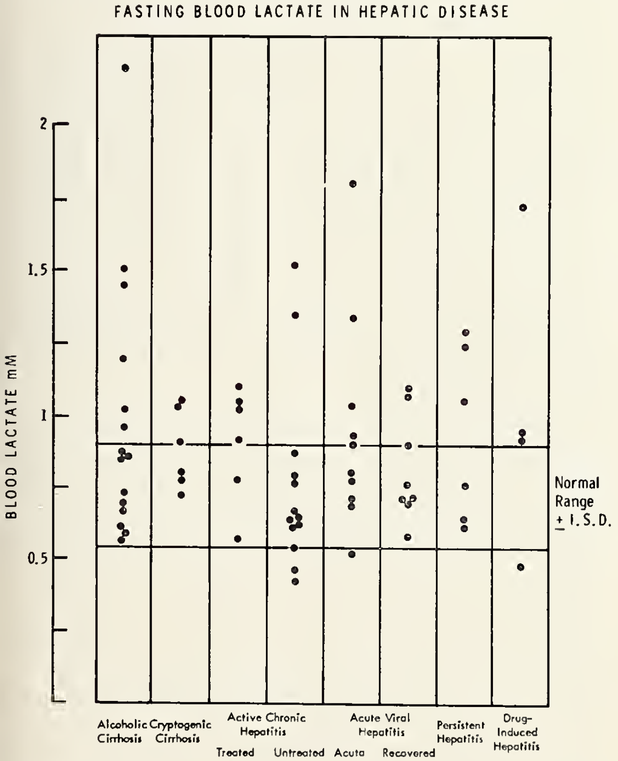

Figure 2
Fasting venous blood lactate in patients with hepatic disease.

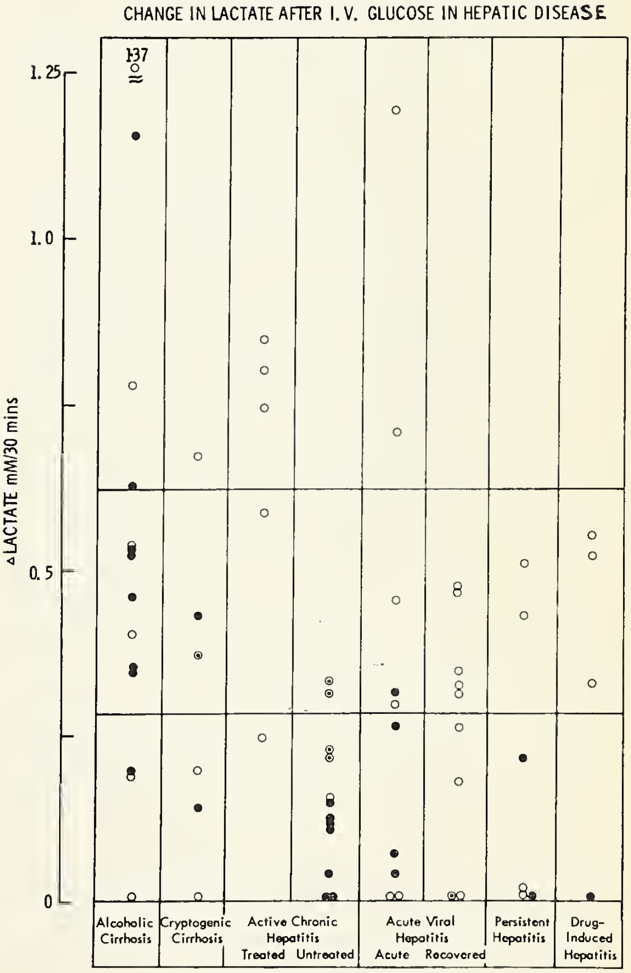

Figure 3
Change in venous blood lactate 30 minutes after intravenous glucose 0.5 g/kg body wt) in patients with hepatic disease. The solid lines enclose ± one S.D. of normal.

fasting blood pyruvate concentrations and a prolonged rise in pyruvate after glucose have been reported in hepatic coma[16,17] although a normal pyruvate response was found in compensated cirrhosis.

Patients with liver disease also show impaired clearance of an exogenous lactate load[18,19] and impaired hepatosplanchnic utilization of lactic acid during a glucagon infusion.[20] An ethanol—tolbutamide test has also been devised as a test of gluconeogenesis in hepatic disease. This involves a 3 hour ethanol infusion followed by a tolbutamide test.[21] In cirrhotic patients with an alcoholic aetiology the test results in prolonged hypoglycaemia compared with normal subjects. However, the test is difficult and open to misinterpretation and may not be useful for non-alcoholic liver disease.

Even such data provides at best indirect evidence of impaired gluconeogenesis. Direct tissue sampling with measurements of intermediates and enzymes is required. However, attempts at obtaining such evidence from biopsy specimens has been disappointing due to the difficulty of obtaining homogenous samples although Schmidt, et al[22] have reported decreased activity of several glycolytic and citric acid cycle enzymes in viral hepatitis. More dynamic information could be obtained by selective catheterization. Studies such as those of Feruglio et al[20] used hepatic vein catherterization but portal vein sampling is required as well. This is easy after portal vein anastamosis but this is helpful with only one end of the spectrum of hepatic disease. Recently portal vein catheterisation has been achieved in normal subjects via the umbilical vein, although a minor surgical procedure is necessary. Only in this way can hepatic and gut contributions to gluconeogenesis be separated. Even with portal and hepatic vein sampling interpretation could be difficult because blood flow to the liver may be grossly abnormal. Therefore flow measurements will be necessary in each individual patient before accurate extraction and production figures can be obtained.

Because of these problems we have investigated gluconeogenesis in experimental liver disease in the rat. Two models have been used. The first was the hepatitis which follows a single dose of galactosamine. This gives a morphological picture similar to that found in human viral hepatitis.[23] Serum amino aspartate transferase (SGPT) rises sharply to a peak 48 hours after injection then returns to near normal 24 hours later. The hepatitis is completely reversible. In contrast to the human disease glucose tolerance was increased in these rats when starved, with an elevated peak insulin response.[24] This may have been related to decreased ketone body levels secondary to impaired ketone body synthesis. However, fasting blood lactate levels were 50% greater than in normal rats and there was a sustained excessive rise in lactate after glucose similar to that found in severe human liver disease. The assumption that this was due to impaired hepatic lactate uptake was confirmed in isolated perfused liver experiments where gluconeogenesis from lactate was decreased by 40%.[25] Several intermediates in the gluconeogenic pathway were estimated in freeze-clamped liver. The results suggested a block at the step catalyzed by phosphoenolpyruvate carboxykinase (oxaloacetate → phosphoenolpyruvate). Indeed, estimation of several enzymes showed that PEP carboxykinase and alanine amino transferase, (SGOT) in particular, had greatly decreased activities which would account for diminished gluconeogenesis from lactate and alanine the major gluconeogenic amino acid. The cause for the decreased activities of these enzymes is unclear although there is the intriguing possibility that it may be due to leakage of the enzymes through the membrane of the damaged hepatocyte.

Gluconeogenesis from glycerol was not investigated although raised fasting concentrations of this substrate suggest impaired utilisation.

The other experimental model used was that of obstructive liver disease. Bile ducts were ligated in rats six to nine days before experiments were performed. Lee, Ross and Haines[26] had already shown that gluconeogenesis was impaired in isolated perfused livers two days after bile duct ligation but this may have been secondary to postoperative effects. However, these findings were confirmed in the 6 day post-ligation animals although changes in blood lactate after glucose in the whole animal were less marked and more transient than in the galactosamine model.

Thus in the experimental situation markedly impaired hepatic gluconeogenesis occurs with, in the case of galactosamine hepatitis, decreased activity of key enzymes. Most striking is the relative lack of effect of this on glucose homeostasis in the whole animal and in man, where hypoglycaemia is rare. It is possible that total body glucose utilization might decrease but recent studies by Owen (personal communication) suggest that the kedney assumes a major role in glucose production in severe hepatic disease. In addition there are increased circulating concentrations of gluconeogenic hormones such as glucagon.[27] Clinically the impairment of gluconeogenesis is of importance in two situations: first, when it leads to fasting hypoglycaemia in severe disease and, second, when it results in the hyperlactataemia which can be a factor in the subsequent development of lactic acidosis. Further investigation is required in man for a quantitative assessment of impairment of gluconeogenesis in different hepatic disorders and to establish the exact sites of the biochemical lesions responsible.

Acknowledgements

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Blood Component Therapy For Abnormalities Of Hemostasis In Liver Disease

Armand B. Glassman, M.D.

Hemostasis involves the complex interaction of multiple, delicately balanced factors. (Table 1) Among these are included: (1) the vascular system, (2) formed elements, primarily platelets, (3) protein coagulation factors, (4) the fibrinolytic mechanism, (5) acid base balance, and (6) other unidentified or poorly understood aspects.

The protein coagulation factors are relatively well defined and can be measured in the laboratory.[1] Many of the others, such as abnormalities of platelet function, of fibrinolysis, of acid base balance or of unusual syndromes like the abnormal microvasculature of diabetes, are poorly understood and cannot be easily quantitated. Some diseases result in alteration of more than one phase. The present discussion will be directed towards changes found with liver disease.[2,3,4]

Increased understanding of the coagulation mechanism allows more definitive diagnosis of abnormalities[5-7] (Table 2). Advances in the preparation of blood components enables the modern blood bank to provide specific therapy for coagulation defects[8-10] (Table 3).

A number of abnormalities of hemostasis are found in association with liver disease (Table 4). Interruption of vascular integrity as occurs in esophageal variceal bleeding, is, or course, a defect of major clinical importance. Changes in platelet numbers and function also occur either secondary to splenomegaly[11] or to retained metabolic products.[12] Protein coagulation factor deficiencies are probably the most common type hemostatic abnormality of hepatic parenchymal disorders. The severity of hemorrhagic episodes can be fairly well correlated with depression of some of the vitamin K dependent protein coagulation factors.[7] Disseminated intravascular coagulopathy (DIC) also occurs in the presence of liver disease.[13] Cirrhotics in addition have an increased incidence of septicemia, which itself can lead to DIC. Hepatomas, liver hemangioendotheliomas or hemangiomas and even hepatitis have been associated with DIC. Acquired abnormalities of red cell membrane may occasionally lead to impaired coagulation.[14-16]

TABLE I

PLASMA PROTEIN COAGULATION FACTORS

*Factor I—Fibrinogen
**Factor II—Prothrombin
*Factor V
**Factor VII
Factor VIII—Anti Hemophiliac Globulin (AHG)
**Factor IX—Christmas Factor
**Factor X
Factor XI
Factor XII—Hageman Factor
Factor XIII—Fibrin Stabilizing Factor

* = Factor produced primarily in liver.
** = Factor produced primarily in liver vitamin K dependent.

TABLE 2

SIMPLIFIED CLOTTING RELATED TO TESTS

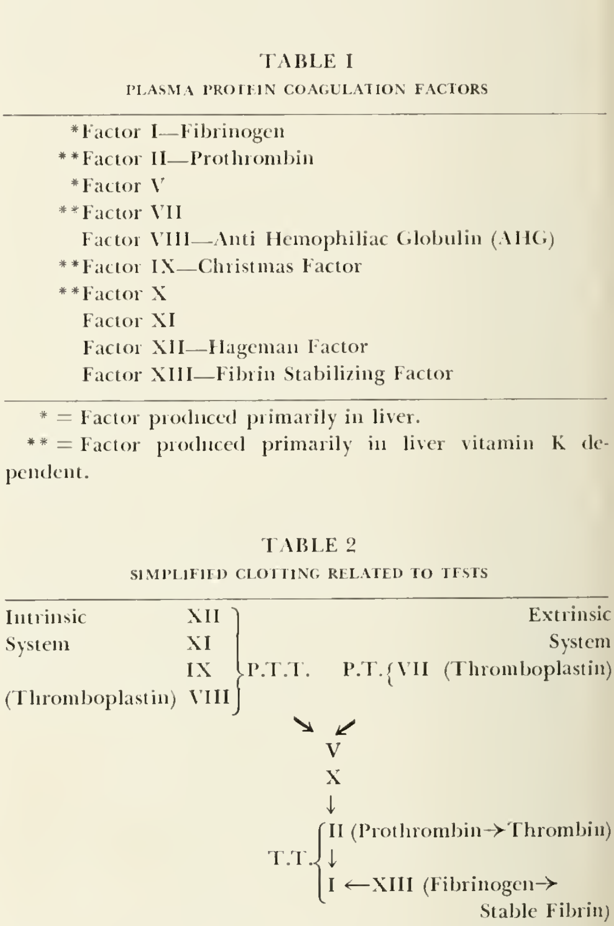

TABLE 3

COMPONENT THERAPY

Coagulation Factor	*Component*
Platelets	Platelet Packs (Fresh to 72 Hr.) Platelet Rich Plasma (Fresh) Platelet Rich Packed Cells (Fresh)
I, II, VII, IX, XI, XII	Single Unit Stored Plasma (Frozen)
V & VIII	AHG—Cryoprecipitate Lyophilized VIII Preparations Fresh Frozen Plasma Plasma < 7D On Shelf

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TABLE 4

ABNORMALITIES OF HEMOSTASIS IN LIVER DISEASE

1. Vascular
   - Esophageal Varices
2. Platelets
   - Thrombocytopenia
   - Thrombasthenia
3. Protein Coagulation Factors
   - Decrease in Vitamin K Dependent Factors
   - Decreased Fibrinogen
4. Fibrinolytic
   - Disseminated Intravascular Coagulopathy
5. General
   - Acidosis

TABLE 5

CLINICAL COAGULATION TESTS

- Primary
  - Prothrombin
  - Partial Thromboplastin Time
  - Thromboplastin Time
  - Fibrinogen
  - Platelets
  - Peripheral Blood Smear
  - Clot Retraction & Lysis
- Other
  - Bleeding Time
  - Clotting Time
  - Tourniquet Test
  - Fibrin Split Products
  - Specific Factor Assays
  - Thromboelastographs
  - Circulating Anticoagulants

Diagnosis

Many of the known plasma coagulation factors are produced in the liver (Table 1). Among the tests useful in evaluating the presence of these factors are: the prothrombin (P.T.) and partial thromboplastin tests (P.T.T.), specific factor assays and fibrinogen determinations (Table 5). The prothrombin time represents that portion of the coagulation process which is initiated by the "extrinsic system". Factor VII can be considered the unique plasma protein factor necessary for a "normal" prothrombin time. The P.T.T. measures that portion of the clotting process initiated by the "intrinsic system". Factors VIII, IX, X and XII are required for completion of the P.T.T. (Table 2). Patients with severe liver disease can be expected to have abnormalities in the prothrombin time, and partial thromboplastin time. Significant decreases in total levels of fibrinogen may result from severe liver disease. These can be quantitatively appraised by examination of the clot formed. Normal values of fibrinogen range between 200 and 400 mg%. Little or no abnormality in clot formation is seen until the fibrinogen level is below 75 to 80 mg%.

Thrombocytopenia and its attendant problems are found with liver disease almost invariably in the presence of splenomegaly. If the vascular system is intact platelet counts of 10,000 per mm^3 or less may exist without bleeding. Below this figure the danger of spontaneous hemorrhage increases rapidly and markedly.[17]

A number of other diagnostic tests, some archaic ones of limited accuracy and usefulness like the bleeding and clotting times, and other new and precise estimates of specific disorder are available.

Treatment

Rational treatment of clotting disorders demands the administration of the blood component or substance causing the defect.

Replacement of platelets, for example, is done with "platelet concentrates". The volume of this preparation is approximately 10 to 15 cc's. The goal of platelet therapy is to bring the number to at least 50,000 platelets per mm^3. There is an expected increment of 10 to 15,000 platelets per mm^3 blood per m^2 body surface area per platelet unit pack. Up until recently platelets could only be used if they were obtained and given within six to eight hours. With advances in storage techniques it has been found that room temperature will permit good viability up to 72 hours.

The effect of platelets should be monitored prior to and, one to two hours after transfusion, at which time the maximum response should be obtained, and at 24 hours to evaluate whether the platelets have maintained their viability. Splenomegaly, fever, and massive hemorrhage may be associated with smaller platelet increments than calculated. Another problem of platelet transfusions is the development of antibodies. Consideration for replacement with compatible HLA loci donors may be important, especially when repeated transfusions are given.[18,19] The presence of antibodies is clinically manifested by fever and chills, little or no platelet increment from the repeated transfusions and pulmonary infiltrates on chest X-ray. In these instances platelets are contraindicated. Qualitative abnormalities in platelet function, as seen in uremia and severe hepatic disease, are best treated by removal of the toxic metabolic factors eg. by hemodialysis or exchange transfusion.[20-22] Giving additional exogenous platelets in such circumstances will not appreciably improve function.

Treatment of protein coagulation deficiencies varies with the etiology. If secondary to malabsorption or biliary obstruction an attempt at therapy with parenteral Vitamin K is made. Where parenteral Vitamin K produces no response, normal coagulation activity can usually be restored with two to four units of stored frozen plasma.

All measurable protein coagulation factors except V and VII are present in approximately 100% of their activity in plasma which has been stored for the 21 day shelf life of bank blood. Factors V and VIII have an in vitro half lives of approximately seven days. Where specific assays demonstrate a reduction in Factors V or VIII, therapy with either fresh frozen plasma or AHG cryoprecipitate should be used.[23]

Little is known about the fibrinolytic process and clinical awareness of it may be masked by other entities such as DIC. Increased fibrinolysis is usually associated with abnormalities secondary to excess clotting. The therapeutic approach should take into consideration the etiologic basis or the activation of plasmin and treatment directed accordingly.

Consideration of "other factors" opens up a Pandora's box of lesions.

Patients with hepatic encephalopathy or severe liver failure may develop problems of acid-base regulation which can be associated with nonspecific impairment of clotting. Certain metabolic products may accumulate as in renal failure, eg. hydroxyphenolacetic acid and quanidinosuccinic acid, which are known to interfere with platelet qualitative function.[24] These may be treated by dialysis or perhaps by exchange transfusion but their efficacy is really unknown.

Hypoalbuminemia appears sometimes to be associated with increased bleeding. The reasons for this are not identified, but may be related to changes in oncotic pressure, increased endothelial permeability, or alterations in synthesis of prothrombin-complex proteins. Few hemostatic difficulties are seen with hypoalbuminemia unless the level is < 1 gm%. Albumin infusions are the treatment of this lesion.

A few general principles should be observed. When bleeding is massive, the primary need is to replace the lost blood and to maintain a good oxygen-carrying capacity. Specific abnormalities may then be sought and corrected in a more leisurely manner. When clotting defects are present but undefined, the use of fresh blood and/or fresh frozen plasma along with bank blood is reasonable and justified.

Finally, fear has developed about the dangers of ammonia in precipitating hepatic coma in stored bank blood in patients with liver disease. Although the ammonia concentration of stored bank blood may reach levels of 600 mg per 100 ml at the end of its shelf-life, this amount of ammonia is minute in comparison with the large quantities of ammoniagenic nitrogen available in gastrointestinal bleeding and can be ignored.

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Neurotransmitters And Hepatic Failure

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Profound hepatic failure is accompanied by widespread deterioration including the central nervous and cardiovascular systems, as well as renal failure. Because the liver occupies a central metabolic role it has been generally assumed that failure of individual hepatic functions results in some way in decreased function of individual organ systems. It is my purpose in this article to present an hypothesis which attempts to unify the pathophysiology of the failure of several organ systems with one patho-physiological mechanism: the accumulation of false neurotransmitters.

Any hypothesis seeking to explain the pathophysiology of hepatic failure must take note of several points:

1. Deterioration of hepatic function is usually present.[1]

2. Shunting of portal blood around the liver generally occurs.[1]

3. The substances(s) involved in the production of hepatic encephalopathy appear to arise in the gut. Bacteria appear to have a role in causation in that decreasing bacterial flora ameliorates the symptoms of hepatic encephalopathy.

4. Those substances involved in the causation of hepatic coma appear to be of nitrogenous origin as hepatic coma may be provoked by increased dietary protein or gastrointestinal bleeding.

5. While ammonia is generally regarded as not being *the* etiologic agent in the pathogenesis of hepatic coma, serum ammonia levels generally reflect the cerebral state in patients with hepatic encephalopathy although the correlation is not exact.[2]

The present hypothesis proposes that under circumstances of hepatic failure and/or shunting of portal blood around the liver,[2] amines or their precursors, arising in the gut and normally catabolized by the liver, flood the peripheral and central nervous systems and accumulate in adrenergic neurons, displacing the putative transmitters norepinephrine and dopamine. On the basis of evidence previously derived in the peripheral sympathetic nervous system[3-5] and more recently in the central nervous system[6,7] such amines can be expected to have a phenolic ring with at least one ring hydroxy group and a carbon side chain, which may include β-hydroxyl group. Other side chain and ring appended groups might be present. That methionine is toxic in cirrhotics, for example,[8,9] would suggest that possibly methylated or methoxy groups on the side chain or phenolic ring are involved as well. Such amines or their precursors have their origin in the gut, since amines are produced by bacterial amino acid decarboxylases[10,11] from the gut protein.

This hypothesis is consistent as well with several other observations:

1. The increased blood tyrosine and phenylalanine (precursors of such amines) levels in many patients in hepatic coma.[12,13]

2. Diets known to be rich in the aromatic amino acids are more toxic to experimental animals with portacaval shunts than diets which contain less of these amino acids.[14]

3. Norepinephrine depletion has been characterized by at least one group of investigators in the high cardiac output hepatorenal syndrome.[15]

4. Increased concentration of a variety of amines have been found in the blood of some patients in profound[16] hepatic coma.

5. The use of monoamine oxidase inhibitors, which prevents the destruction of such amines, may result in increasing hepatic stupor despite diminished serum ammonia levels.[17,18]

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The following experiments and observations are related to the above hypothesis.

Changes In Neurotransmitters In Experimental Acute Hepatic Coma

Acute hepatic coma is produced in rats by a two-stage ligation of hepatic blood supply over 24-48 hours. An end-to-side portacaval shunt is followed by hepatic artery ligation in 250 gm. female Sprague-Dawley rats. Animals are warmed and hypoglycemia prevented by infusions of hypertonic glucose. Such animals become jaundiced and comatose over an 8-12 hour period and die in a situation resembling acute hepatic coma. Studies done on the brains and hearts (representing the peripheral sympathetic nervous system) reveal a widespread derangement in neurotransmitters. Octopamine, a β-hydroxylated phenylethanolamine known to function as a false[19] or co-transmitter[20] in both peripheral[21] and central nervous system[22] was markedly elevated in the brains and hearts of such animals. This accumulation is relatively specific for nerve endings as β-phenylethanolamine, which is not taken up nor released to a significant extent from sympathetic nerve, is minimally, if at all, elevated in the brains and hearts of such comatose animals[23]. While octopamine is not likely to be the substance uniquely responsible for the pathogenesis of hepatic coma, nonetheless its accumulation may indicate that a similar class of compounds might accumulate under such circumstances in hepatic failure and that these amines interfere with cerebral function by displacing the normal transmitters dopamine and norepinephrine.

Other derangements in brain amines are also present. Serotonin is markedly elevated. Norepinephrine is diminished by approximately 25% while dopamine, as measured generally distributed throughout the brain, is minimally decreased but the difference is not statistically significant.[24] Because of methodologic difficulties we have not yet succeeded in accurate measurements of regionally distributed dopamine. The decrease in norepinephrine is quite striking and is presumably of sufficient magnitude to interfere with cerebral function.

The peripheral nervous system, represented by the heart, in general follows a similar pattern, with markedly elevated octopamine, elevated serotonin and decreased norepinephrine. Heart dopamine, assayed in only a few animals, appears unchanged.[24] Thus, displacement of norepinephrine from adrenergic nerve terminals by the accumulation of false or relatively inactive neurochemical transmitters, such as octopamine, may indeed be present in acute hepatic coma, at least in this animal preparation.

An attempt was then made to estimate the presence of amines such as octopamine in patients in acute hepatic coma. Urinary 24 hour octopamine excretions were determined on urine collected in HCl from patients with asymptomatic liver disease, patients with asterixis and precoma, and from comatose patients in hepatic failure. There appears to be a positive correlation between increasing severity of encephalopathy and increased urinary octopamine excretion; those patients with a more profound degree of central nervous system disturbance excreted more octopamine.[23] The amount of octopamine excreted by normal patients as determined by this method, utilizing an enzymatic labeling methodology similar to that reported by Molinoff and Axelrod[25,26] is similar to that determinted by Kakimoto and Armstrong[27] by completely chromatographic techniques.

Assay of amines in blood of patients in hepatic coma reveals that in general, β-hydroxylated amines are elevated, and that more polar compounds predominate. Because of the tedious methods of identification used to date, such amines have not been fully characterized. The rather extensive list of amines identified by Asatoor and Kerr[16] suggests enormous variability between patients. The recent application of electron-capture detectors to gas-liquid chromatography techniques, capable of detecting less than 2 pg of such amines in blood will undoubtedly make identification of such amines in patient material easier.

The Use of L-Dopa in Hepatic Encephalopathy

Largely on the basis of this hypothesis and some preliminary data indicating increased amine excretion in patients in hepatic encephalopathy, the use of L-Dopa in patients with profound unresponsive hepatic coma was undertaken.[28,29] Simultaneously and unbeknownst to us, Parkes *et al.*[30] apparently struck by the similarity of the tremor in parkinsonism and classical asterixis as seen in hepatic encephalopathy, administered L-Dopa to three patients using 5 gms of L-Dopa as a single dose. In our own patients, we began with rather smaller doses starting with 250 or 500 mg and increasing the dose in small increments. Since the duration of action of L-Dopa is known to be somewhat less than 4 hours in the experimental animal[31] doses were given at four-hourly intervals. To date we have administered L-Dopa to 11 patients in profound hepatic coma unresponsive to other means of therapy, with prompt awakening (after the 1st dose) in 6 of these patients and delayed awakening (in the first 24-36 hours) in 2 others. Three patients with fulminant acute alcoholic hepatitis failed to respond. It is notable that one patient who did awaken after 24 hours was decerebrate at the time L-Dopa was started; liver function did not improve and she subsequently died of a respiratory arrest, which may have been precipitated by an arrhythmia. It is acknowledged that these experiences in patients are anecdotal and that a controlled double-blind study will be the only valid scientific evidence which is acceptable for a specific effect of L-Dopa in hepatic coma. However, the spontaneous awakening of such patients appeared very unlikely from the duration and the nature of their primary liver disease. Furthermore the "awakening" sometimes occurred despite deteriorating hepatic function.

Measurements of cardiovascular and renal function in such patients appears to be of value in selecting those patients who are likely to respond to L-Dopa. In a norepinephrine depleted state such as postulated, a high cardiac index, mild (10-30 mm Hg) hypotension, a vasodilated, low peripheral resistance state, a low urinary sodium, as well as decreased response to tyramine infusion suggest that such a patient should respond to L-Dopa. The cardiac index, which appears inappropriate and secondary to a loss of peripheral resistance will, in general, decrease, when a dose of 50-75 mg of L-Dopa/kg/24 hrs. is achieved. The orthostatic hypotension[32] usually seen in Parkinsonian patients treated with L-Dopa is not seen; instead hypotensive patients in hepatic failure show a paradoxical rise in blood pressure of 10-20 mm Hg systolic when given L-Dopa, suggesting increased peripheral vascular resistance with transmitter repletion. Diuresis has been observed in approximately half of the patients who responded to L-Dopa. This finding is similar to that reported by Sarazin *et al.*,[33] two of whose patients showed a diuresis following the initiation of L-Dopa therapy. Although it has not been possible to predict diuresis accurately, those with higher cardiac indices have tended to develop diuresis. Increased sodium and potassium excretion following L-Dopa has also been noted by Finlay *et al.*[34] Figure 1 illustrates some of these points.

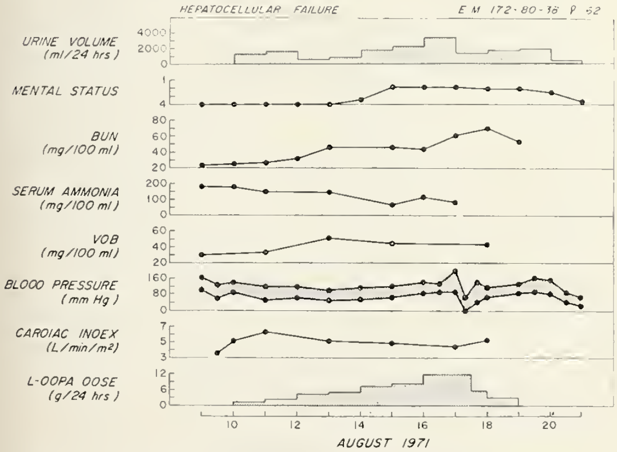

Figure 1. Schematic presentation of patient described in the text. Note diuresis coincident with L-Dopa, decreased cardiac index, delayed improvement in mental status, and lability in blood pressure.

This patient, with subacute hepatitis, deteriorated following exploratory laparotomy for a presumed common duct stone which was not present. Following operation her serum bilirubin continued to rise until, when transferred to this hospital, it was 35 mgm%. At this time she had been comatose for approximately 1 week. Although her response to L-Dopa was not immediate, her cerebral function improved while liver function appeared to deteriorate. The cardiac index decreased after a dosage of 6-9 gm L-Dopa/24 hr. was achieved. One interesting side effect of L-Dopa in this patient was marked swings of blood pressure from 40-200 systolic without any change in the patient's apparent clinical state and not temporally related to L-Dopa dosage. Since these stopped when L-Dopa was stopped, they were probably related. Partially because of this and partially because of fear of gastrointestinal bleeding from prolonged L-Dopa therapy, L-Dopa was terminated in this particular patient. Approximately 24 hours later she became somnolent, vomited, aspirated, developed a rampant pneumonitis, and expired.

The alerting effect of L-Dopa in hepatic coma might conceivably be nonspecific. However, the brain changes in amines in experimental animals in our laboratory suggest that perhaps dopa is working by replenishment of the normal adrenergic transmitter stores, dopamine in the striatum and, indirectly, norepinephrine in the cerebral cortex.[35] Since L-Dopa is known to prevent synthesis and the accumulation of serotonin[36] as well as releasing stored serotonin[37,38] it is possible L-Dopa operates by this mechanism as well. Experiments carried out in collaboration with Dr. Ross Baldessarini[39] have revealed that administration of L-Dopa to chronically shunted animals will result in release of serotonin from brain. Similar findings were obtained in animals in acute hepatic coma to whom dopa was administered. Since serotonin and norepinephrine appear to be inversely related,[36,37] decreased brain serotonin is generally accompanied by norepinephrine increase. Thus a more normal balance in brain transmitters is restored.

L-Dopa administration also decreases the accumulation of presumed false transmitters in such animals, again acting to restore the balance between various brain transmitters.[39]

The Hepatorenal Syndrome

One other situation frequently seen in hepatic failure is the so-called "hepatorenal syndrome"—renal failure in association with hepatic failure. It now appears that there is nothing basically wrong with the kidneys themselves, which can be used as donor kidneys for transplantation,[40] and that they merely reflect generalized bodily disturbances. Certain aspects of renal function are unimpaired; sodium absorption is maximal—characteristically the urine of such patients is virtually free of sodium.

Investigation has been hampered by the lack of a suitable model. However, investigations in patients suggest at least a diagnostic approach to classification. However, since certain modes of therapy are suggested by this classification, which in turn suggests the pathophysiology, the recognition of the various types of hepatorenal syndrome has practical significance as well. From data presented by Mashford *et al.*,[15] others,[41,42] and ourselves, it appears that at least two well defined groups of patients in "hepatorenal" syndrome can be presented. In the so-called Type I, (Table 1) the basic pathophysiological problem is hypovolemia to which the kidneys respond appropriately. The reason for such hypovolemia is not entirely clear. In some patients it appears as if colloid administered is rapidly lost into ascites as rapidly as it can be administered, so that an adequate central venous pressure and intravascular volume cannot be maintained. Such patients can be identified by a normal or low cardiac index and a relatively normal or high peripheral vascular resistance. Such patients generally are stable insofar as their liver disease is concened, and may have preservation of rather normal liver function.[43] These patients may be identified by a variety of diagnostic maneuvers including an increase in cardiac index in response to volume infusion.[41] If umbilical and vena caval catheterization is carried out, a high hepatic vein wedge pressure is present. Some investigators[44] have recently suggested that a gradient between the inferior vena cava and the right atrium has etiologic significance.

The therapy of such patients involve infusion, or, when possible, portal decompression. Volume infusion entails administration of massive amounts of colloid, salt poor albumin or ascites reinfusion[41] and more recently by various devices in which ascites protein is concentrated and reinfused while some of the fluid is discarded.[45] Under such circumstances ascites reinfusion may result in remission in this type of hepatorenal syndrome.[45] When liver function will permit, portal decompression by a shunt, which will also decompress the liver, will result in prompt diuresis and disappearance of in-

TABLE 1

TENTATIVE CLINICAL CLASSIFICATION OF HEPATORENAL SYNDROME

Characteristics	*Type I*	*Type II*
Cardiac Index	Normal or decreased	Increased
Blood Pressure	Normal or low	Decreased (by 5-30 mm Hg)
Peripheral Resistance	Normal or increased	Decreased
Intravascular Volume	Low	Normal
Urinary Na	<10 mEq/liter	<10 mEq/liter
A-V 02 Difference	Normal	Decreased
Associated Findings:		
	Intractable Ascites	Hepatic Encephalopathy
	IVC-RA gradient	Acute Hepatic Insult
	High hepatic vein wedge	
Pathophysiology	Effective hypovolemia	Maldistribution
Diagnostic Maneuver	Volume infusion	Tyramine-NE infusion
Therapy:		
	Volume infusion	α-adrenergic agents
	Ascites reinfusion	Dopa
	Portal decompression	

Table 1: A tentative clinical classification for diagnosis and therapy of 2 types of hepatorenal syndrome.

tractable ascites.[43,45,46] While such patients are rare, because of the powerful diuretics available at the present time I recently had the opportunity to observe and operate on (in desperation) a patient with intractable ascites and chronic hepatorenal syndrome in whom an angiogram seemed to result in acute shutdown. In this patient[46] diuresis occurred within one half hour of creating asplenorenal anastomosis. She has been well since.

While the previous type of hepatorenal syndrome appears to be hypovolemic in origin this is clearly not the case in the Type II as defined by Tristani and Cohn.[41] This type of hepatorenal syndrome generally follows an acute insult, such as emergency shunt surgery or transthoracic ligation of varices. Although such patients are hypotensive (10-30 mm Hg) their extremities are warm and well perfused and peripheral pulses are bounding. They appear vasodilated and display hyperkinetic circulation. These patients can be identified by a high cardiac index, a low peripheral resistance and a low urinary sodium. A-V oxygen (A-V O_2) differences when measured are low, indicating shunting of blood. They remain oliguric even when volume has been corrected (as measured by central venous pressure or, preferably, pulmonary artery wedge pressure-indicating adequate left trial and presumably ventricular filling).

In these patients it appears that maldistribution of blood flow is a prominent pathophysiologic feature. One may view the body as consisting of two sets of vascular beds, one with a high resting vascular resistance such as skin, splanchnic bed, muscle, the other, such as the kidney, with a low resting vascular resistance. If one sharply decreased the peripheral sympathetic resistance by norepinephrine depletion, those vascular beds with a normally high vascular resistance would increase their blood flow markedly, resulting in increased flow to the skin, muscle and splanchnic bed. Such blood flow is "uneconomical" and is manifest by a low A-VO2 difference, indicating minimal extraction. Cardiac index would then increase in compensatory fashion, presumably secondarily to the demands of certain organs whose resistance has remained essentially unchanged and whose percentage of cardiac output has decreased and which, in fact have experienced a *relative* increase in vascular resistance. This appears to be the earliest lesion seen in the Type II hepatorenal syndrome, a decreased fraction of an elevated cardiac output delivered to the kidneys.[41,47]

In this group of patients Mashford *et al.*[15] first derived evidence for norepinephrine depletion; a lack of responsiveness to a tyramine infusion test while indicating adequate vascular responsiveness by an essentially normal response to infused norepinephrine. We have since confirmed and extended such observations.[48] In these patients displacement of normal peripheral adrenergic transmitters by accumulation of false neurochemical transmitters appears a distinct possibility.

Therapy consists of redistributing the blood flow by repletion of normal transmitters with L-Dopa, or in patients in whom this is not feasible, by providing a "prosthetic false transmitter", generally an alpha adrenergic agent with a weak direct alpha action. The use of such weak alpha adrenergic agents was first proposed by Gornel *et al.*[49] More recently Sugerman and his co-workers[50] and Fischer and his co-workers have treated several patients with metaraminol[28,29] in rather larger doses than suggested by Gornel and his co-workers. Infusions of alpha adrenergic agents in Type II hepatorenal syndrome results in a decrease of the presumed inappropriate cardiac index, and increased A-VO2 difference and a diuresis and natriuresis indicating the resumption of flow to the outer cortical nephrons. Unfortunately metaraminol is a potent constrictor of the hepatic artery,[51] and unhappy situation following end-to-side portacaval shunt when the liver is dependent on the hepatic artery solely for its nutritional supply. Metaraminol appears to be more injurious to the liver than other alpha adrenergic agents such as phenylephrine perhaps because less of the latter is required in such patients and because of its inhibition of norepinephrine synthesis.[52] To date we have administered phenylephrine intravenously to four patients with the Type II hepatorenal snydrome with resultant urine outputs of up to 8 liters a day in patients who had been profoundly oliguric, (less than 150 cc's/24 hrs) (Fig. 2). Criteria for selection are an elevated cardiac index, a low urinary sodium, (10 mEq/l) a low peripheral resistance and mild to moderate hypotension. Unfortunately the Type II hepatorenal syndrome often occurs in the setting of a rapidly failing liver and while the renal problem may be ameliorated the patient may go on to die of other causes.

Although total salvage from the successful treatment of the Type II hepatorenal syndrome is not great because of associated problems, the successful use of alpha adrenergic agents in reestablishing urine output suggests that other means of redistributing blood flow within these patients (such as

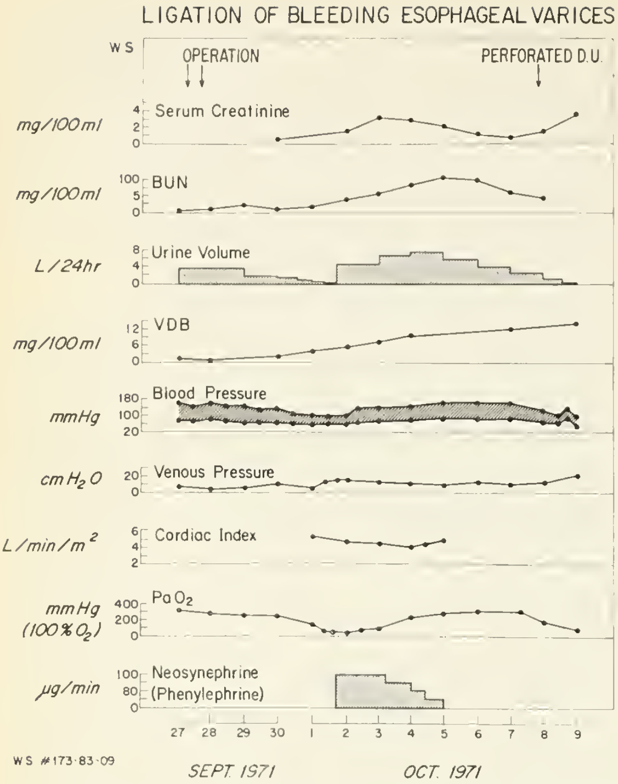

Figure 2. Gradual renal shutdown and acute hepatorenal syndrome, Type II, following ligation of bleeding esophageal varices and reoperation for post-operative bleeding. A high cardiac index and high venous pressure suggest normovolemia. Hypotension is reversed by neosynephrine and is accompanied by massive diuresis (up to 8 liters daily). This patient might well have survived but for a perforated duodenal ulcer.

by selectively increasing vascular resistance in certain normally high vascular resistance beds) may be followed by increased urinary output. If the proper means of therapy can be devised without further injury to the liver the prospects for survival may well be increased.

The success of alpha adrenergic agents in these patients argues against the classical view of hepatorenal syndrome which assumes an active circulating vasoconstricting agent.[53] This view cannot explain the success of alpha adrenergic agents in these patients, and passive malfunction of the kidney based on the maldistribution of blood flow is much more in accord with this experimental finding. Furthermore, in some of the more recent papers[53] patients were undefined, as cardiac index and peripheral resistance were not measured. One also wonders about the applicability of xenon 133 washout studies in these patients who presumably demonstrate decreased renal cortical flow. Since the rapid component of xenon 133 washout curves are dependent on prompt and efficient renal cortical uptake, is information gained by the use of this technique in the hepatorenal syndrome completely valid?[53]

To be sure, not all patients with hepatorenal syndrome fall into either one of the above categories. Patients with severe hepatitis, especially alcoholic, appear to have either a mixed or else completely different type of problem, which has not yet proven amenable to therapy in our experience. What is important, however, is the selection of those patients in whom therapy (either portal decompression of pharmacological therapy) is likely to be successful. Further investigation will undoubtedly yield useful information which will result in more intelligent care of these patients.

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LACTULOSE:

Comments On Mechanism Of Action And Current Status

Harold O. Conn, M.D.

The introduction of lactulose for the treatment of portal-systemic encephalopathy by Bircher and his colleagues represented a new and exciting therapeutic concept. Its introduction also represented an equally fascinating story of serendipity. In the 1965 *Year Book of Medicine* Ingelfinger in discussing an abstract on the effect of lactulose on the stool flora commented that this synthetic sugar might conceivably have clinical application in the treatment of cirrhosis.[1] Johannes Bircher, who at the time was a house officer in the United States, filed the idea away in his mind until he had returned home to Switzerland where he obtained some lactulose and administered it successfully to patients with portal-systemic encephalopathy.[2] These authors believed that the acidity which resulted from the bacterial degradation of lactulose in the lower intestine inhibited the growth of proteolytic, comagenic bacteria and stimulated the growth of fermentative organisms without such malevolent aspirations. This sequence of events has not, however, been confirmed,[3,4] and it is probable that acidification *per se* is more important than floral arrangements in the bowel.

Although the mechanism of action of lactulose is not clearly delineated, it appears to be associated primarily with the metabolism of the synthetic sugar in the lower intestinal tract. Bacterial degradation in the ileum and colon of lactulose, which is normally neither absorbed nor metabolized in the upper intestinal tract, causes acidification of the lower intestinal contents. One may thus consider normal subjects to be lactulase-deficient. As do disaccharidase deficiencies, lactulose has two major intestinal effects which may account for its efficacy in the treatment of portal-systemic encephalopathy.*

The first of these effects is the acidification of the intestinal contents. Reduction in stool pH favors the trapping in the intestinal lumen of ionizable substances with an alkaline pK such as ammonia, the conventional villain in hepatic coma,[6,7] and amines, which have recently been implicated in the false neurotransmitter hypothesis of portal-systemic encephalopathy.[8,9] Indeed, we have found that the efficacy of lactulose can be closely correlated with its ability to reduce stool pH.[7,10] The inability to lower stool pH, which we have observed in about 10% of our subjects, has been associated with indifferent therapeutic effects. In all patients who have experienced a beneficial response to lactulose we have observed a decrease in stool pH.

The second is the cathartic effect of lactulose. Depending on the dose and the degree of enteric degradation, lactulose is an effective cathartic. Indeed, it is commercially available as a laxative in much of the world. Purging is an accepted adjunct in the treatment of portal-systemic encephalopathy and has, itself, been demonstrated to be effective, albeit not optimal, therapy.[11] Catharsis coupled with acidification is an effective therapeutic combination. Acidification alone may be of limited value, but the synergistic effects of the repeated sequence of "trap and dump", "trap and dump", *ad infinitum* potentiates the effects of both.

Although lactulose therapy has not usually been associated with the anticipated alterations in stool flora,[3,4,12] it may well be that the acidification has been too transient in these studies to expect substantial changes in the quantitative stool floral pattern. Perhaps such alterations in bacterial pattern

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* Theoretically in patients with lactase deficiency or other discrete disaccharidase deficiencies such as sucrase or maltase, the administration of adequate amounts of the appropriate disaccharide will prevent the development of spontaneous portal-systemic encephalopathy or will effectively treat it.[5]

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require more prolonged changes in the pH of their environment. It seems likely that any self-respecting *Lactobacillus acidophilus* would love an acidic environment. It would, therefore, be of great interest to study intestinal bacterial flora quantitatively in patients with lactase or other disaccharidase deficiencies.

In our on-going, prospective, controlled studies in which lactulose and neomycin therapy are compared in the treatment of portal-systemic encephalo-

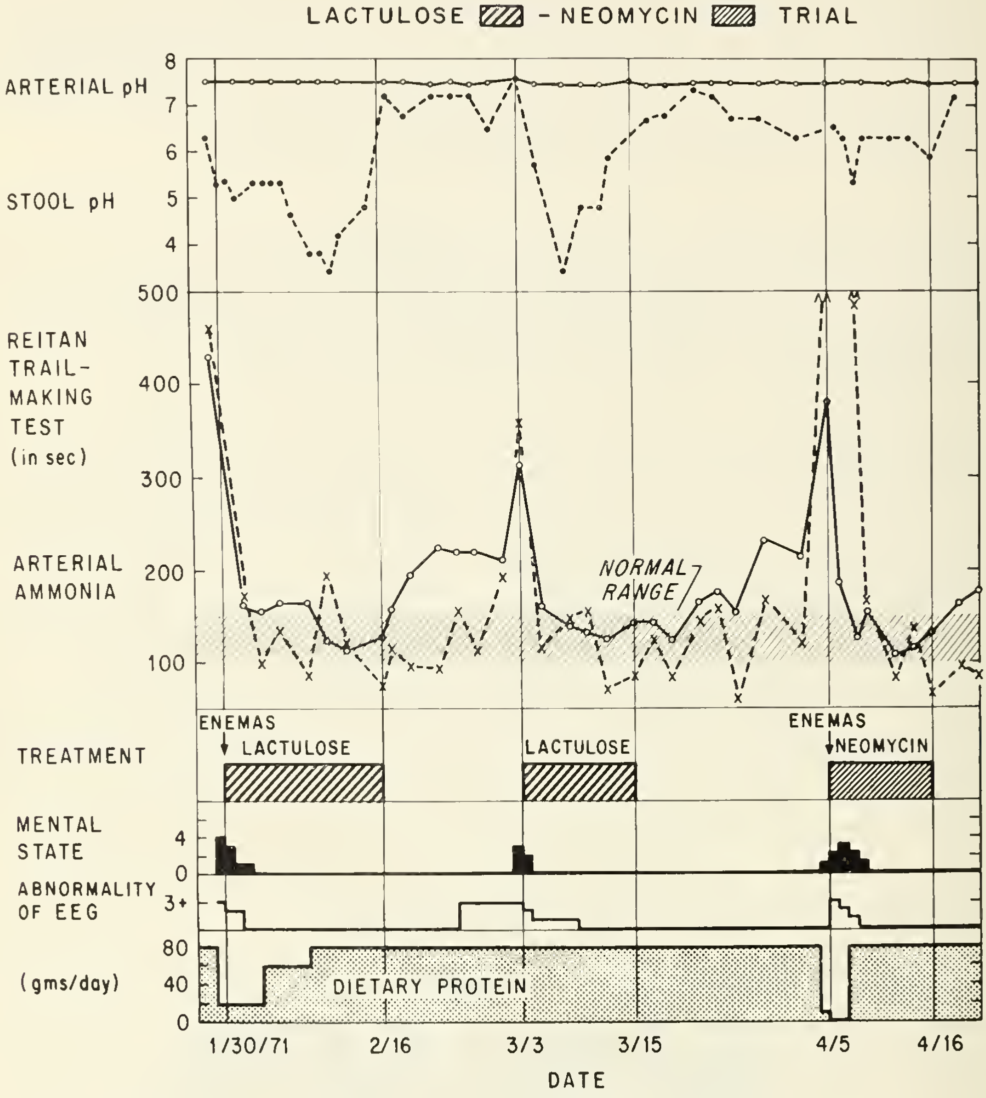

Fig. 1. This patient (J.S.), a 54 year old man with cirrhosis and portacaval anastomosis developed recurrent portal-systemic encephalopathy while on a normal diet. On the first such episode he was treated with lactulose, cleansing enemas and dietary protein restriction, and make a prompt recovery. After lactulose had been discontinued and normal dietary consumption reinstituted he again developed impending coma which was treated with lactulose alone. In order to evaluate the role of lactulose *per se*, no enemas were used and he was given 80 grams of protein each day during the encephalopathy and its therapy. Again he responded promptly to lactulose treatment. A third episode of encephalopathy two months after discontinuation of lactulose was treated with neomycin. Despite the simultaneous use of enemas and dietary protein withdrawal, the therapeutic response to neomycin was not as rapid as with lactulose.

Note that in each instance lactulose therapy was associated with a significant decrease in stool pH, but in no change in arterial blood pH. The blood ammonia concentration (solid lines), which was closely paralleled by Reitan trailmaking test (dashed lines), a simple, quantifiable test of mental function, closely reflected the mental state and the electroencephalographic patterns.

pathy, we have used sorbitol, prepared to look and taste like lactulose, as a control substance *because* it has cathartic activity approximately equivalent to lactulose. It thus serves as an ideal control drug which mimics the major side-effect of lactulose as well as its appearance. (It is not etymologically correct to refer to sorbitol used in this way as a placebo since a placebo, by definition, is inert, while sorbitol is exceedingly ert). It is interesting that we and several of our associates have observed small decrements of stool pH following sorbitol, indicative of partial intestinal degradation.

We have observed in double-blind, controlled, prospective comparisons of lactulose* and neomycin that in eight patients lactulose was equal to or more effective than neomycin.[10] In four of these patients, who had had recurrent episodes of portal-systemic encephalopathy despite profound dietary protein restriction and continuous neomycin administration, lactulose was far superior to neomycin therapy. In these four patients its use was associated with remission from recurrences of encephalopathy, prolonged improvement in mental state and resumption of normal dietary protein intake. Several of these patients had been maintained on lactulose therapy for as long as three years. We have encountered no difficulty in achieving an ideal dosage level, balancing therapeutic effect against the cathartic action of the drug. Even more important, we have encountered no toxicity of any type.

In addition to its use in the long-range management of chronic portal-systemic encephalopathy we have used it in the treatment of 25 episodes of acute nitrogenogenous coma.[13] In these circumstances we have administered lactulose in large doses given hourly until bowel movements have been stimulated and have then reduced the dosage to normal maintenance levels. Used in this manner, lactulose appears to be as effective and works at least as rapidly as neomycin used in conjunction with cathartics and enemas. (Figure 1) Other investigators have recently reported that the rectal administration of lactulose induces prompt clinical responses.[14]

Lactulose thus appears to be effective in the management of acute nitrogen-induced hepatic encephalopathy in which the source of the precipitant can be eliminated or decreased. We have found that approximately two-thirds of the episodes of hepatic encephalopathy are nitrogenous in origin, induced by gastrointestinal hemorrhage, dietary protein or azotemia and one-third are non-nitrogenous, induced by analgesic, tranquilizing or sedative drugs or electrolyte or metabolic disturbances.[15] Lactulose does not appear to be useful in the management of these non-nitrogenous types of encephalopathy, and may be of limited value in nitrogenous coma when the source of the ammonia-liberating precipitant cannot be controlled.

At first glance the therapeutic combination of lactulose with neomycin appears self-defeating. Lactulose requires bacterial degradation and neomycin destroys bacteria. Our experimental observations in normal subjects, although fragmentary, support the mutual incompatibility of these drugs.[10] We have observed in normal volunteers on lactulose the appearance of asymptomatic, stool-softening i.e. the induction of two or three soft, acidic, spinach-green bowel movements daily which have the odor of meconial stools. The addition of neomycin to lactulose causes within a few hours abdominal cramps, watery, odorless diarrhea with a return to normal of the stool pH. Presumably, in this situation the neomycin has destroyed the bacteria, which have been metabolizing the lactulose, thus inducing an osmotic catharsis. On the other hand, we have occasionally observed patients in whom large doses of lactulose, as great as 120 grams daily, have failed to cause either diarrhea or acidification of the stool. These patients act as if they produced a lactulase.

Among the most intriguing developments in the lactulose story are the recent reports that lactulose and neomycin together may be therapeutically superior to either alone.[16,17] Furthermore, we have observed in several patients who were receiving lactulose and exhibiting the characteristic reduction in stool pH that the addition of neomycin failed to cause the expected increase in stool pH or to diminish the therapeutic effect. One must conclude from these observations—if our understanding of the mechanism of action of these drugs is correct—that neomycin may inhibit the growth of proteolytic, ammoniagenic or aminogenic bacteria, but failed in these instances to suppress fermentative organisms which degrade lactulose. It has long been known that neomycin does not sterilize the gut. In patients who have received long-term neomycin administration, as have most patients with chronic portal-systemic encephalopathy, one might anticipate the development of neomycin-resistant bacteria.[18] Indeed, we have observed cirhotic patients in whom neomycin-resistant organisms have been cultured from the stool and even from the blood. Whether this situation is an exception or the rule is not clear. We have also observed patients who were being effectively treated with lactulose in whom the addition of neomycin caused deterioration of control. It is also conceivable that an entirely unexpected mechanism of action of lactulose is operative. The possibility that these drugs may have synergistic or potentiative effects when administered together is a most exciting development worthy of careful investigation. The opposite possibility that neomycin may inhibit the effectiveness of lactulose requires cautious combination of the two drugs.

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* We are indebted to N. V. Philips-Duphar and Philips Roxane Laboratories for generously providing lactulose and support of these studies.

Unfortunately, lactulose is not presently available to American physicians, although it is on the market in Europe and Australia where federal drug control is less strict. Its early commercial availability in those countries discouraged the performance there of definitive, therapeutic evaluations which might have provided hard data for consideration by our Food and Drug Administration.

It is available, however, for investigational use in this country where a small number of controlled investigations are in progress. We are engaged in cooperative, inter-hospital clinical trials of lactulose in acute and chronic portal-systemic encephalopathy and are actively seeking patients with the chronic recurrent disorder. We hope that such studies will make this exciting medication commercially available in the near future.

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Connecticut Medicine

Editorials

The Editorial Board wishes to convey to Dr. Hyman Chernoff's widow their deep feelings of loss at the news of his untimely death on August 31. Dr. Chernoff's distinguished career is detailed in his obituary printed elsewhere in this issue. His contributions as Contributing Editor will be sorely missed.

The Editorial Board

Hail And Farewell

Eugene Braunwald recently wrote of "Future Shock in Academic Medicine" with the rapid turnover of senior professors, the half-life of medical school deans approximately three years, and the abandonment of the fight for tenure that provided the security and stability of a department; albeit also providing the danger of intellectual stagnation for want of new people with new ideas.

Dr. Philip K. Bondy, the C.N.H. Long Professor of Medicine and Chairman of the Department for the past seven years, has resigned as Chairman and will spend a two year sabbatical leave from Yale in London as the Cancer Research Campaign Professor of Medicine at the Institute of Cancer Research and the Royal Marsden Hospital. His many friends in Connecticut hope that Phil will return to the New Haven scene upon the conclusion of his new challenge. His influence on the practice of medicine in Connecticut has been immense. His colleagues and pupils have assumed important posts in academic endocrinology and he has trained many superb clinicians now practicing in our state.

His willingness to participate in all of our medical society educational programs made him revered and respected for his warm personal qualities, as well as his superb intellect. The absence of this brilliant researcher, stimulating educator and incisive clinician from Connecticut will be noted. Come home soon, Phil!

The Division of Metabolism at Yale, will also lose Frank Epstein, Professor of Medicine, who was appointed Director of the Thorndike Memorial Laboratory and Professor and Head of the Harvard Medical School's Department of Medicine. Frank had been at Yale since his student days. His clinical training and rapid rise in academic rank all were at New Haven. He is a superb teacher, a dedicated expert clinician and a founding figure of clinical nephrology. He will be sorely missed.

To replace Dr. Bondy, Yale was fortunate to be able to appoint Dr. Louis G. Welt as the new Chairman of the Department of Internal Medicine. Dr. Welt is a medical graduate of Yale in 1938 and had his house staff training at the New Haven Hospital and was a close associate of Dr. John P. Peters, and author of a number of superb laboratory and clinical studies in renal physiology and metabolism. As much at home in the laboratory as well as the bedside, Dr. Welt left New Haven to assume greater responsibilities at the University of North Carolina in 1952 and was appointed Chairman in 1965. Much in demand as panelist and lecturer at graduate medical meetings and symposiums, Dr. Welt has somehow found time to author and edit a number of classic monographs and standard textbooks in the field of renal disease and electrolyte disturbance. He has been one of a small group of clinicians who have established nephrology as a proper clinical sub-specialty. Welcome back home!

Upstate at the University of Connecticut School of Medicine, another significant change was announced. Dr. Seymour Reichlin, the former head of the Medical and Pediatric Specialties and more recently Chairman of the Department of Physiology, has assumed the directorship of the endocrine unit at Tufts Medical School, a position held for many years by Professor E. B. Astwood. His enormous research interest in the regulation of the endocrine glands by the nervous system allowed him to serve as a joint assistant professor of medicine and psychiatry, and early in his career, Director of the Psychosomatic Service at Washington University in St. Louis.

In the short three years that he was in Hartford, Sy had an enormous impact on our educational program. A vigorous participant in our Annual Scientific Meetings, he counseled your Editor frequently about proper choice of speaker and topic to meet the needs of our membership. His enormous contribution to endocrinology was honored by his selection as the Eli Lilly Lecturer for 1972 of the IV International Congress of Endocrinology-Endocrine Society meeting in Washington, D.C. A measure of Dr. Reichlin's "Renaissance Man" abilities is exemplified by his being voted by the Medical House Staff at University of Connecticut as "an outstanding, stimulating and thought-provoking teacher both at the patient's bedside and in the conference room," a noteworthy award since Sy spent his last year at UConn as Head of Physiology. Good luck, Sy, you have a number of warm friends in Connecticut who wish you well.—W.F.E.

Early Detection In Large Bowel Cancer

With the exception of skin cancer, cancer of the colon and rectum is the most common type of cancer in this country. There will be 73,000 new cases in the United States during 1967.[1] It is second only to lung cancer as a killer. The reason is that unlike lung cancer, early diagnosis of cancer of the colon and rectum often leads to surgical cure. Standard diagnostic methods of digital, sigmoidoscopic and barium enema examinations have been used in attempts at early diagnosis. In addition, there have been experimental attempts at early diagnosis with colon lavage followed by tests on the washings with Papanicolaou stains. With regard to this last method, although it has a certain degree of accuracy, its requirements with respect to patient preparation and specimen procurement are too formidable to permit its use in the routine examination.

Recent reports are also questioning the method of sigmoidoscopic examination in the field of cancer prevention. In more than 2,500 examinations, Greegor[3] detected only one cancer and that was a malignant polyp. In asymptomatic patients this author found not one frank carcinoma. Moertel[4] reports a similar experience with sigmoidoscopy in 1,020 routine proctoscopic examinations, although 7½ per cent were found to have benign polypoid lesions. The largest series was a report on a total of 47,207 proctoscopic examinations in five large hospitals where only 0.12 per cent of invasive cancer was detected.

The inadequancy of this procedure in the field of cancer detection and prevention requires us to place more emphasis on the correct selection of patients requiring a barium sulphate enema examination for a definitive diagnosis.[5,6] Even the barium enema has its failure particularly in the area of cecal lesions, but it is still our best diagnostic tool. However, selecting the proper candidate among asymptomatic patients for this procedure is important, because a B.E. is moderately expensive and time consuming and if we subjected all asymptomatic patients to this procedure as a routine screening test for colon cancer, we would swamp all radiologic facilities. Furthermore, to order a B.E. for every patient over forty every year or two is not only mechanically impossible but also questionable from the standpoint of radiation exposure. We need a better screening method in those asymptomatic patients who may need a B.E.

We have known for a long time that stools of patients with colon cancer contain occult blood. However, as a screening maneuver in the field of early cancer detection this finding has not received enough attention. Greegor has just forcefully brought it to our attention by reporting that he found all patients but one who had colonic cancer to have blood in the stool at the time of an initial visit to his office for a routine examination. He emphasizes that testing only one portion of one specimen of stool for each patient would be inadequate. But by using two separate portions of three separate examinations he obtained positive reactions in all seven asymptomatic patients with frank cancer. A negative reaction was obtained in the case of a malignant polyp but fortunately this was picked up via a sigmoidoscopic examination.

Greegor has refined the guaiac test first by using a special pure electrophoretic filter paper impregnated with guaiac. Since guaiac on the paper is not in solution it will remain stable indefinitely. When the stool is spread on it thinly then two drops of a specially prepared stabilized three per cent H_2O_2 solution in anhydrous, alcohol and water are dropped on the opposite side and the decisive blue ring on the paper indicates a positive reaction. Greegor further refined it by preparing slides of paper on which the patient is taught to spread the stool thinly and submit them for analysis. This wholly avoids the unpleasantness of dealing with many stool specimens. The incidence of positive reactions from slides from three stools on three separate days was surprisingly high—23 per cent in routine asymptomatic examinations.

Several questions arise as a result of Greegor's work. If a B.E. is given to all asymptomatic patients whose stools show positive reactions for occult blood will this detect colon carcinoma early and decrease mortality? The answer is definitely yes. Is there any danger in using this system? Certainly not inasmuch as it applies to the asymptomatic patient. Those with possible bowel abnormality we investigate anyhow. How much of a burden would this place on the radiologist? When we recall that more curable cancer is detected by B.E. than with all other diagnostic roentgenograms combined, we are justified in going ahead and make new facilities available as the problem requires it.

Apparently a meat free diet is not a necessary preliminary to collect a stool specimen. A stool obtained on the examining finger is not reliable. Only two of eight patients with cancer had uniformly positive reactions for blood in one stool and this is why Greegor recommends three different stools be examined.

It should be emphasized that repeatedly positive reactions for occult blood in the feces must be interpreted as indicating blood loss from the gut and to pinpoint the bleeding site could require more than just a B.E. It might require complete studies in the entire gastrointestinal tract.—L.H.N.

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Azothioprine In Immunoinflammatory Disease

Immunosuppressive drugs have been designed for the treatment of cancer, are potent and because of their side effects there has been justifiable hesitancy in applying them in benign autoimmune diseases. Some of these diseases, however, are just as lethal as neoplastic disorders and it is not surprising that immunosuppressive therapy should be applied in these cases. One particularly malignant form of an immunologic disease is Wegener's granulomatosis. This is a necrotizing respiratory granulomatosis of unknown etiology with relentless progression and when renal insufficiency sets in there is a rapid development of uremia. Although the etiology and pathogenesis of Wegener's is not known an immunologic reaction is considered by many workers to be the significant cause of its progression.

Eleven patients of giant-cell granulomatosis of the respiratory tract were reported by Walton[1] in 1958. Before immunosuppressive drugs came to be used in such cases including lupus, nephritis and ulcerative colitis, high doses of steroids were used with only partially beneficial results and as we all know the penalities of hypercorticism may be excessive. An alternative form of treatment is therefore badly needed. In the two cases reported by Kaplan and his associates[2] high doses of steroids did not control the progression of the disease. Accordingly the authors decided to start chemotherapy because such drugs are known to alter immunologic responsiveness. There are now seven reported examples of this rare form of necrotizing vasculitis that have responded to antimetabolites. All these patients were gravely ill, none responded to corticosteroid therapy.

In the two patients reported by Kaplan, there was an unusual opportunity to assess the efficiency of immunosuppressive drugs, since when treatment with azothioprine was started both patients already had histologic evidence of renal insufficiency. The consequence of treatment with immunosuppressive drugs was a significant improvement in systemic systems and respiratory tract findings, a decrease in proteinuria and arrest of further deterioration of renal function. This clearly indicated a beneficial result from the therapeutic regime employed. The production of a general state of well being in the patients was noteworthy as compared to patients treated with cortisol.

The therapeutic regimen employed in Kaplan's study suppressed antibody response and inhibited the induction of a cellular hypersensitivity to a hapten-human serum albumin conjugate. Unfortunately the response of an already established cellular hypersensitivity state was not affected nor is it at present known whether the effects observed on the immune response were necessary to produce the satisfactory results observed in the two patients. It seems therefore necessary to elucidate without delay the mechanism of action involved in the benefits of anti-metabolites in the treatment of immunologic injury. Considerable speculation at present surrounds the nature of the alteration produced by anti-metabolites to account for the clinical responses observed. Do they have a specific immunosuppressive effect? Do they have a relatively general capacity to destroy rapidly proliferating cells indiscriminately?

Originally the synthesis of an anti-metabolite by George Hitchings[3] in the early 1950's was motivated by the hope that such a compound might inhibit neoplastic growth and they developed an unusually interesting molecule 6-mercaptopurine. This drug was known to affect cell metabolism in a complex manner, but its affect on neoplasms when judged by its results in treatment of leukemia was disappointing. Then came an intensive search for other immuno suppressive purine analogues. Various modifications of the 6-mercaptopurine structure were tried and eventually azothioprine, an imidazole derivative of the parent thioprine was found to have a therapeutic index higher than that of 6-mercaptopurine in mice.[4]

Azothiaprine has since become the cornerstone of the present day practice of organ transplantation. Since Kaplan's study this drug and for that matter all other anti-metabolites are gaining ground in the treatment of other immunologic conditions as well. While there has been a tentative probing of the potentialities of this new form of treatment, the fact that it has been so successful in Wegener's, an inevitably fatal and usually unremitting disease, certainly indicates that azothioprine treatment can be effective in the most trying circumstances.

Such encouraging findings, however, must be approached with some caution especially when it might be applied is another immune disease such as lupus nephritis. Here the disease is quite advanced and immune deposits are encased within the glomerulus where no degree of immunosuppression seems capable of restoring the function of kidneys injured to this extent. In fact glomerular disorders seem resistant to immunosuppressive therapy. In Kaplan's cases the extra renal manifestations of Wegener's responded well to azothiaprine. However, the renal biopsies continued to show glomerular nephritis and renal function remained impaired though however not progressive.

Regardless of this limitation immunosuppressive therapy in immune diseases has been impressive enough to encourage further work. We need more information about the simple facts of the natural history of diseases such as the nephrotic syndrome, systemic lupus erythematosus. When and how anti-metabolites may be of benefit in the treatment of immunologic injury is now an important area for investigation in this vexing problem of immunologic diseases. Out of such investigations it is hoped will also come the mechanism of these diseases and their prevention.—L.H.N.

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1. Walton, E. W.: Giant-cell granuloma of respiratory tract (Wegener's Granulomatosis). Brit. M. J., 2: 265, 1958.
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3. Hitchings, G. H.: Anti-metabolites and chemotherapy: integration of biochemistry and molecular manipulation. In International symposium on chemotherapy of cancer. Proceedings of the symposium Lugano 28 April to 14 May 1964. Organized by the Swiss Academy of Medical Sciences and sponsored by F. Hoffman-La Roche and Co., Std. Edited by Plaudus H. Plattner Amsterdam, C. The Netherlands, Elsevir Pub. Co., 1964, p. 77.
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CALL

SEMI-ANNUAL MEETING OF THE HOUSE OF DELEGATES

The 1972 Semi-Annual Meeting of the House of Delegates will be held at the Sheraton-Park Plaza Hotel, New Haven, Connecticut, commencing at 9:00 o'clock in the morning of Wednesday, December 6.

David A. Grendon, President
Kenneth F. Brandon, Speaker of the House
Louis C. Backhus, Secretary

INTRODUCTION OF RESOLUTIONS

Article V, Section 12, Par. 3 of the Bylaws of the Society Provides that:

All resolutions to be considered as regular business at any regular meeting of the House of Delegates must be in the hands of the Speaker not later than seventy-two hours before the opening of that meeting. All resolutions and recommendations published in the official agenda distributed to the members of the House prior to the meeting at which action is to be taken shall be considered as regular business. Resolutions presented later than seventy-two hours before the opening of a meeting will be referred for consideration as regular business by the House only when they are presented by the Council or accepted for consideration by majority vote of the delegates present. Any resolution which does not qualify in accordance with the aforesaid provisions for consideration as regular business may be accepted for action my a majority vote of the delegates present and, if so accepted, shall be referred at once by the Speaker to a reference committee. Any such reference committee shall consider resolutions referred to it and shall report, with recommendations to the House before adjournment of the meeting.

PROPOSED AMENDMENTS TO THE BYLAWS

The following proposed amendment to the Bylaws was presented to the House of Delegates on April 25, 1972 and was tabled for consideration and action at the next regular meeting of the House of Delegates.

In accordance with the Bylaws, this amendment will be published in Connecticut Medicine, "on one or more occasions prior to the next meeting . . . at which meeting the amendment shall be taken off the table and acted upon by the House of Delegates."

INTRODUCED BY EDWARD A. REM, NEW CANAAN

Purpose: To combine the Committee on Accident Prevention with the Committee on Emergency Medical Services.

Amendment

Article XI, Section 3, E—Socio-Environmental Division

Delete "Committee on Accident Prevention" and substitute therefor "Committee on Accident Prevention and Emergency Medical Services"

Delete "Committee on Emergency Medical Services"

Article XI, Section 5, Par. 21

Delete entire paragraph re "Committee on Accident Prevention" and substitute therefor the following:

Par. 21. Committee on Accident Prevention and Emergency Medical Services. The Council annually shall nominate to the House of Delegates a Committee on Accident Prevention and Emergency Medical Services to consist of not less than ten members and shall nominate the chairman thereof. The functions of the committee shall be to coordinate and integrate the efforts of Connecticut agencies concerned with the study and prevention of accidents and to study and keep informed on matters pertaining to the planning of programs to provide continuing medical care to the people of the state under disaster conditions and assure the availability of adequate medical services under emergency situations of less than disaster proportions, and to make recommendations to the Council and House of Delegates concerning these matters. In connection with the performance of these functions, the committee shall encourage members of the society to serve as consultants to community groups and other agencies active in the areas of accident prevention and emergency medical services and shall, when indicated, make recommendations to the Council for the implementation of legislative measures which the committee may deem advisable.

Article XI, Section 5, Par. 27

Delete the entire paragraph re "Committee on Emergency Medical Services".

Renumber paragraphs accordingly.

SUMMARY OF ACTIONS COUNCIL MEETING

Wednesday, August 30, 1972

I. ATTENDANCE

Present in addition to the Chairman, Dr. K. F. Brandon, were: Drs. Root, Jr., Spitz, Backhus, Weber, Jr., Dean, Gardner, Fabro, Hess, Bradley, Rem, Ragland, Jr., Harwood, Pelz, Wilson, Dambeck, Roch, Nemoitin, Friedberg, Canzonetti, Harkins and Klare.

Also present were: Mrs. Lindquist, Mr. Olson (FCMA), Mr. Tomat, Dean Massey (UConn) and Dr. Richards.

Absent were: Drs. Grendon, Cramer, Nolan, Johnson, VanSyckle, LaBella, Milles, Freedman, Krinsky and Hastings.

II. ROUTINE BUSINESS

Approval of Minutes

As printed and distributed, it was VOTED to approve the minutes of the meeting of July 27, 1972.

Life Membership

It was VOTED to approve applications for Life Membership received from the following eligible Active Members:

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Francis J. Braceland, 200 Retreat Ave., Hartford (H)–1/1/73

Irving Friedman, Old Oak Road, West Hartford (NL)–1/1/72

Nicholas A. Milano, 271 Elm St., West Haven (NH) –1/1/73

Charles I. Solomon, 85 Jefferson St., Hartford (H)–1/1/72

Date of Next Meeting

The next Council meeting is scheduled for Thursday, September 28, 1972.

III. OLD, NEW AND SPECIAL BUSINESS

Format and Content of Council Minutes

It was VOTED to refer to the Subcommittee to Study and Revise the Bylaws, for study and report, the general question of what format for recording the minutes of Council meetings would be most valuable for future reference and what content of the minutes is considered essential to such future reference. In particular, a recommendation of the Subcommittee is sought with respect to the recording of motions that are lost; resolutions that are *not* adopted; amendments to motions and resolutions that fail to receive majority vote; challenges to rulings of the Chair and the results of such challenges; etc. It was further VOTED that, for this assignment, J. Alfred Fabro, Torrington, be appointed to pro tem membership on the Subcommittee with the privilege of voting.

Resignations, Appointments, etc.

(a) *Connecticut Cancer Epidemiology Program*: Deferred from the meeting of 7/27, it was VOTED to nominate alternates to E. Tremain Bradley, Norwalk, and Wayne P. Whitcomb, New Haven, as CSMS-designates on the CCEP Council, as follows:

Albert G. Gosselin, Jewett City–4 years
John L. Meyer, Putnam–2 years

Commissioner Foote and the medical schools' representatives on the planning committee for the CCEP will be notified of these nominations.

(b) *CUPIS*, Inc.: It was VOTED to nominate Ronald S. Beckett, Hartford, to replace Frederick C. Weber, Jr., Greenwich (resigned) as the CSMS-designate on the Board of Directors of CUPIS, Inc.

(c) *State Examining Board for Physical Therapists*: Being advised that Otto G. Goldkamp, Hartford, is resigning from membership on this

Board, the Council VOTED to recommend Thomas F. Hines, Wallingford, to the Governor for appointment as Dr. Goldkamp's replacement for the balance of the term 7/1/71-6/30/76.

Reconsideration—Report of Committee on 3rd Party Payments

Acting on the request of the Committee chairman, Dr. Browning, the Council VOTED to reconsider its 7/27 action to refer the report back to the Committee for additional study and confirmation of facts. In brief, the report recommended that the Council ask the Department of Health, Education and Welfare to determine whether the Connecticut Department of Welfare is complying with both the spirit and letter of HEW regulations with respect to having a Medical Care Advisory Committee in existence and functioning in an advisory capacity to the Welfare Commissioner in the administration of Title XIX medical assistance programs (including Medicaid). After reconsidering the Committee's subject report, the Council further VOTED to implement the recommendation of the Committee just stated. According to information received by the Council, the Title XIX Medical Care Advisory Committee has had no meetings since mid-year of 1970.

Reports—Committee on Statewide Medical Planning

(a) *Connecticut Ambulatory Care Study*: It was VOTED to receive for filing the minutes of a meeting of the Committee held on 6/28/72 at which a candidate for the post of Project Director was interviewed and several problems were discussed which relate to participation in the Study of several institutional providers in the New Haven area. It was further VOTED to receive for filing the minutes of a meeting of the Committee held on 8/23/72 plus supplemental information on the status of the grant request presented verbally by the Committee chairman, Frederick C. Weber, Jr., Greenwich. Acting on a recommendation of the Committee the Council VOTED to approve the employment of Daniel Hamaty, M.D., of Charleston, West Virginia, as project director for the Study. There ensued an informal discussion of various other details of the Study and its implementation, but the foregoing was the only action taken.

(b) *Medical School Deans as Guests of the House of Delegates*: It was VOTED to approve a recommendation of the Committee that the Deans of the two medical schools of Connecticut be invited as guests at all meetings of the CSMS House of Delegates (without vote), and, if they are unable to attend a given meeting, "to send one of the associate deans in their offices to represent them".

(c) *Participation of Medical Students and House Officers in the Activities of the Society*: It was VOTED to refer to the Subcommittee to Study and Revise the Bylaws, for study and report, a recommendation of the Committee that the entire status of Student Membership and participation in the activities of the Society be reviewed. It was further VOTED to request the Subcommittee to make an identical review with respect to hospital house officers in training (interns and residents).

Report—Judicial Committee

It was VOTED to accept for filing the minutes of a meeting of the Judicial Committee held on July 19, 1972. It was further VOTED to approve three statements recommended by the Committee which relate to the physician's obligation to furnish medical information to another physician about one of his former patients. The three statements follow:

1. A doctor, upon request of another physician, is obliged to transfer the asked-for parts of his records in transcript or over the telephone after receiving a request, preferably in writing by the patient, for such transfer.
2. In the case of a clinic or similar organization, the treating physician is the one who must request the records with the patient's permission.
3. The question of whether or not the previous physician's bill has been paid does not enter into the transfer of such records.

Finally, it was VOTED to refer the statements and the Council's action thereon to the Committee on Public Relations for dissemination to the membership of the Society.

It was VOTED to accept for filing the minutes of the meeting of the Judicial Committee held on August 16, 1972, in which the Committee made recommendations on two major items as follows:

(a) *Question of Ethics*: On a question of ethics on which the Committee had made a prior report and suggested a possible course of action, the Committee now recommended that "the entire matter be dropped and that no definitive action be taken". It was VOTED to approve this recommendation of the Committee. It was further VOTED to authorize CSMS legal counsel, over his signature, to reply to a letter received from legal counsel of the physician about whom the question of ethics had been raised initially.

(b) *CSMS-County Association Relationships*: It was VOTED to accept for filing an opinion filed by CSMS legal counsel on the subject of CSMS-County Association relationships, based on counsel's interpretation of the Society's Charter and Bylaws. It was further VOTED to approve, with minor amendment, a subject recommendation of the Committee as follows: "That the matter of requiring continuing medical education as a requirement for continued membership in the Society should be left to the individual County Medical Associations, and that the Society should vigorously encourage and promote continuing medical education by offering advice and assistance to the component Associations in their efforts to promote effective programs in continuing medical education".

N.B.: Although continuing medical education was cited as a prime example of the matter under study, legal counsel was requested to give his opinion on a broader question; i.e., taking into account the provisions in the Charter and Bylaws of the Society covering membership, could the Society, by amending its Bylaws, impose new conditions of membership with which the component Associations would be obliged to comply? In brief, it appeared to be counsel's opinion that the Society could impose new conditions with respect to membership in the Society but that it is doubtful as to whether the component Associations would be obliged to comply with respect to their own requirements for membership.

It was further VOTED to apprise the Committee on Continuing Medical Education of the foregoing actions as information and for guidance.

Employment of Assistant Director

In executive session, the Council VOTED to accept the report and approve the recommendation of the Committee on Administrative Organization and Planning that Mr. Francis G. Sweeney, Southington, be employed as Assistant Executive Director for Public Affairs and offered an initial one-year contract at a starting salary stipulated by the Committee.

Report—Committee on 3rd Party Payments

It was VOTED to accept for filing a report of the Committee on the subjects of Blue Cross-Blue Shield vs. HMO coverage for obstetrical care; coverage of care for the new-born and premature infant; coverage of ambulatory care services. It was further VOTED to request the chairman of the Committee to select an informed subcommittee of Committee members, plus the chairman of the Committee on Hospitals or his designate, to arrange a meeting of such subcommittee with the State Insurance Commissioner for the purpose of discussing with the Commissioner the matters covered by the report, and to report to the Council on the information gained and the conclusions reached at such meeting.

Connecticut Health Services Research Series

It was VOTED to receive for filing a communication from the co-editor of this Series which requested the Council to continue the Society's promotional support of the publication and also to consider contributing direct financial support in 1973 and 1974. Regarding the latter request, the Council VOTED to approve the recommendation of the Fiscal Committee that the co-editor be advised that, at the present time, it is not feasible for the Society to make a financial contribution.

Request for Co-Sponsorship of Symposium

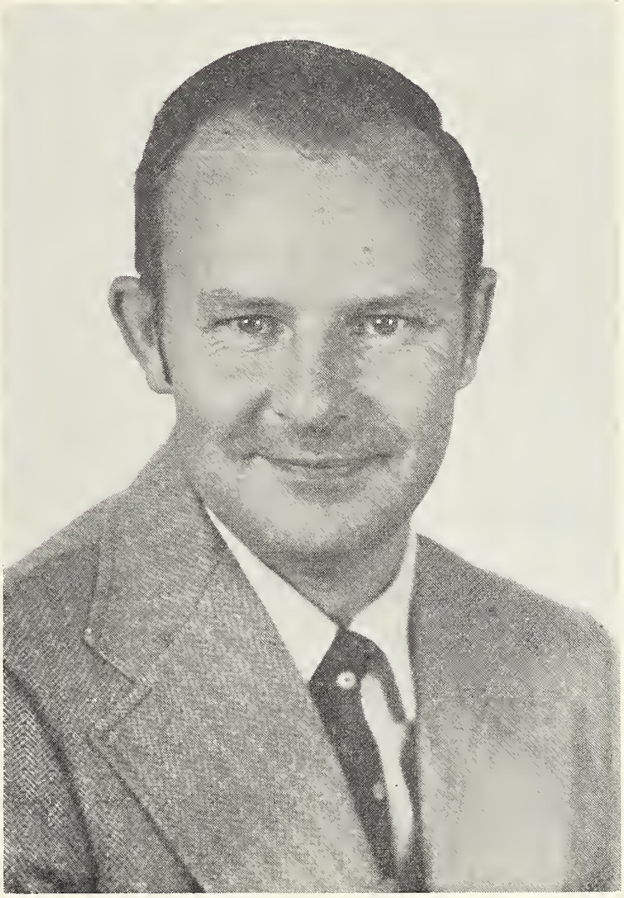
It was VOTED to receive for filing a letter received from John Donnelly, Hartford, chairman of the CSMS Committee on Mental Health, and to approve Dr. Donnelly's recommendation that the Society co-sponsor (with the State Department of Mental Health and the Connecticut Postgraduate Seminar in Psychiatry and Neurology) a Symposium (Hartford Hilton Hotel, Hartford, 11/9/72) titled: "The Addictive Personality; Treatment and Prevention". Since the Symposium is being subsidized by Geigy Pharmaceuticals, co-sponsorship by the Society entails no financial obligation.

Commendation—NHCMA Newsletter

It was VOTED to commend the New Haven County Medical Association for the timeliness and informative content of its *Newsletter* (8/72 issue) on the diagnosis and treatment of gonorrhea and syphilis.

N.B.: *The foregoing is a summary of the proceedings and actions of the Council on August 30, 1972. Detailed minutes of the meeting are on file at 160 St. Ronan Street, New Haven, for perusal by an interested member of the Society.*

New CSMS Staff Appointment



Francis G. Sweeney

Prior to his affiliation with the Connecticut State Medical Society on September 1, Mr. Sweeney was employed as Public Relations Director for the New Britain General Hospital. A graduate of the University of Hartford, with a B.A. degree in Public Relations, he has served 13 years in the newspaper field in a variety of advertising and editorial capacities with the *Hartford Times, Meriden Journal* and the *New Haven Register*.

Mr. Sweeney entered the public relations field in 1963 and has held the following posts: Community Relations Director for the Tuberculosis and Respiratory Disease Association of South Central Connecticut; Public Relations Director and Director of Trade Development Department of the Greater New Haven Chamber of Commerce; and Executive Director of the Better Business Bureau of Greater New Haven.

Married to the former Eileen Robinson of Kensington, they have three children and reside at 40 Debbie Drive, Southington.

As Assistant Executive Director for Public Affairs, his primary staff assignment will be in the area of legislative and socio-economic activities.

Placement Wanted

Allied Personnel

General clinical lab technician or lab assistant to a physician(s): graduate of Vermont College and Boston City Hospital. Gretchen C. Stahl, 75 Seymour Avenue, Derby, Connecticut.

X-Ray Technician: Registered. Graduate of Bridgeport Hospital School of X-Ray Technology. Lorraine R. Bradley, 29 Church Hill Road, Trumbull, Connecticut 06611.

Physician's assistant in general medicine, pediatrics or general surgery: graduate of Cleveland Clinic Foundation. 24 years old. Joseph P. Checca, Jr., 1910 South Hulmac Ct., Apartment D, Columbus, Ohio 43229.

Laboratory Assistant: B.A. and M.S. from University of Connecticut, John M. DaSilva, Jr., 3 Sun Street, Enfield, Connecticut 06082.

Physician's Assistant—28 years old. Available September 1972. Graduate of Duke's P.A. Program. Wishes to work with surgeon. Interested in coastal area. William M. Signorini, 2112 Broad Street, Apartment D-18, Durham, North Carolina 27705.

Physician's Assistant—32 years old. To assist general or thoracic surgeon. Available Sept. 1972. Duke University graduate. John J. Gerstbrein, 923 West Markham Avenue, Durham, North Carolina 27701.

MEDIHC Program—Former military medics; number of candidates available. Contact: Henry J. Miller, Military Experience Directed into Health Careers, 640 Chapel Street, New Haven, Connecticut 06510. Phone: 865-0862.

Physician's Assistant—40 years of age. College degree. Available December 1972. Presently in training under U.S. Public Health Service Program. Robert B. Weinheimer, 25 East 213 Street, Bronx, New York 10467.

Anesthesia—32 years old. Board eligible. (FLEX) Presently in practice. Interested in medium sized community in group or associate type practice. Husband a general surgeon. Celia Mercado- Sagullo, M.D., 138 Terrace Place, Brooklyn, New York 11218.

Emergency Room Physician — Connecticut license. Desires position from March, 1973, to July, 1973. ER experience. Presently in the service. Perin W. Diana, Jr., M.D., USA Medical Center, Box 130, APO San Francisco, California 96331.

Family Practice—35 years old. Presently in practice. Will have Connecticut license by early November. Interested in group or solo practice. Indarjit Singh, M.B., Ch.B., 14 Robinhood Drive, Dundas, Ontario, Canada.

Internal Medicine-Hematology—Board eligible. Prefers group practice. 32 years old. Available immediately. Eugene F. Cheslock, M.D., 107 Beverwyck Drive #11, Guilderland, New York 12084.

Internal Medicine—Board eligible. 34 years old. Connecticut license. Presently available. Associate practice. Willing to assume practice. NYU and Yale trained.

Internal Medicine-CV—National Boards, Board certified. 48 years old. Connecticut license. Interested in hospital related position or group practice. John J. Mead, M.D., 211 East 53rd Street, New York, New York 10022.

Internal Medicine—Available January 1973. Board eligible. Connecticut license. Solo or associate practice. 42 years of age. Bernard L. Meyers, M.D., 18 Second Street, Troy, New York, 12180.

Internal Medicine and Endocrinology—Available immediately. Board eligible. FLEX. 42 years old. Group or associate type practice. T. N. Paul, M.D., 2900 S. Lincoln Avenue, North Riverside, Illinois 60546.

Internal Medicine—Part time work in Hartford area. Board eligible. Connecticut license. Clinic work or ER will be considered. 29 years old.

Internal Medicine-Hematology — Available December 1972. Board eligible. Medium size community with group or associate practice desired.

Internal Medicine-Cardiology—Board eligible. 35 years old. (Flex) Prefers institutional type appointment.

Internal Medicine—Board certified. Large or medium sized community in group or associate practice. Available in January. Subspecialty—nephrology.

Ob/gyn—Board exams taken in June. FLEX. Interested in group practice. Elie N. Shuhaibar, M.D., The Western Pennsylvania Hospital, 4800 Friendship Avenue, Pittsburgh, Pennsylvania 15224.

OB/GYN—Board eligible. Connecticut license. Available early 1973. 36 years of age. Group, associate or institutional type practice.

Ophthalmologist—34 years old, New York license. Completing residency at St. Lukes Hospital, NYC. Available in September.

Ophthalmologist—34 years old. Board eligible. National Boards. Large or medium sized city desired. Group, solo, associate practice desired. Available immediately.

Orthopedic Surgery—35 years old. Board eligible. Associate practice. Trained in spine and hand surgery.

Orthopedics—Board eligible. (FLEX) 32 years old. Associate position desired. Swiss trained. Residency at Mt. Sinai, New York City.

Orthopedics—Board certified. FLEX. 32 years old. Institutional appointment desired. S. G. Khrishman, M.D., 407 Genessee Street, Orlean, New York 14760.

Otolaryngologist—Board certified, 34, married, five-year university residency training in all phases of otolaryngology and maxillofacial surgery. Completing military service. Available in July 1973. Seeking private practice, association, group or solo, practicing all aspects of the specialty. Contact Gustav Braun, M.D., Box "O", Balboa Heights, Canal Zone.

Pathologist—Board eligible. 49 years of age, wishes to relocate in Connecticut. Thomas R. Argiro, M.D., 201 Dakota Street, Hot Springs, South Dakota 57747.

Pathologist—Board certified. Mid 50's. Interested in computerized and semi-automated laboratory. Available September 1972. E. Clifford Heinmiller, M.D., 1126 Washburn Place West, Saginaw, Michigan 48602.

Pathologist—Available late 1972. Presently Assistant Pathologist. 37 years of age. Abdul K. Yousuf, M.D., 252 Providence Ave., Riverside, Rhode Island 02915.

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Pediatrics and Pediatric Hematology—Board eligible, 37 years old. New York license. Solo or group practice. Chi-Yen Kuo, M.D., 20 St. Paul's Court, Apartment 1D, Brooklyn, New York 11226.

Pediatrics—38 years old, Board certified, Connecticut license through endorsement. Fellow of A.A.P. Available with three month's notice. Prefers salaried arrangement for first year. Group or associate practice.

Pediatrics—Board eligible. Will consider clinic or public health position in western part of the state. 28 years of age. Married. Available immediately. Part or full time. Ann H. Hines, M.D., 82 South Street, Danbury, Connecticut 06810.

Psychiatry—Part time position in adult and child psychiatry. Connecticut license. Guilford or shore area desired. Board certified.

Radiologist—Board eligible, Connecticut license. 48 years of age. Also trained in neuroradiology.

Radiologist—42 years old. Fully certified by the American Board of Radiology. Eligible for a Connecticut license. G. H. Hussein, M.D., 2411 Fifth Street, Fort Lee, New Jersey 07024.

Surgery-General—National Boards. Board eligible. Group or associate practice in large or medium sized community 100 miles from New York City. 32 years of age. Available February, 1973. George A. Knaysi, Jr., M.D., 14 LeMoy Street, Fort Bragg, North Carolina 28307.

Surgery-General—Board eligible. Presently full time hospital staff. (FLEX) solo or group practice in medium sized community. Wife practicing anesthesiologist. Nestor M. Segullo, M.D., 138 Terrace Place, Brooklyn, New York 11218.

Surgery-General—Board certified. Wishes to live closer to the coast. Presently in practice. Solo, group or associate practice in large or medium sized community. Johannes Schokker, M.D., 2009 East McCarty, Jefferson City, Missouri 65101.

Surgery—General surgeon, board certified, university trained, extensive trauma and vascular experience, desires associate or group situation. Available December 1972.

Surgery—General and thoracic. Board certified. Small or medium sized town. Group or associate practice. Available immediately. Harold McWilliams, M.D., 3119 Plymouth Rd., Norristown, Pennsylvania 19403.

Surgery—General—Board eligible. Interested in associate type practice. (FLEX). 35 years old. Jose A. Raquel, Jr., M.D., 160-10 89th Avenue, Apartment 5-E, Jamaica, New York 11432.

Urology—Board eligible. Presently in practice. Available in 2 or 3 months. Group or associate practice preferred. Solo practice will be considered. 35 years of age. Wishes to move back east. Harvard and Columbia trained. Southern Connecticut preferred. Albert V. Assili, M.D., 40184 San Carlos Place, Fremont, California 94538.

ANYONE INTERESTED IN THE ABOVE IS ASKED TO CONTACT THE PHYSICIANS' PLACEMENT SERVICE, 160 ST. RONAN STREET, NEW HAVEN, CONNECTICUT 06511

Placement Opportunities

Allergist—Board eligible or certified, preferably with special interest in chest disease as associate, partner and eventual purchaser of a large and growing practice in allergy and chest disease in an excellent professional social community. Availability immediately or by July 1, 1973 would both be suitable for introduction of the appropriate physician to assume this excellent opportunity—initially with the assistance of the present allergist and a staff of several registered nurse clinicians. Opportunity for immediate professional and economic growth is unparalleled.

Allergist—Third allergist needed for rapidly growing group practice in central Connecticut. Present partners under 40 years of age.

Associate Medical Director—Duties require performing preplacement, special, periodic and executive medical examinations. Assist in administration of corporate medical programs. Background in internal medicine and/or industrial medicine would be helpful. Salary negotiable.

Anesthesiologist—Position available as an associate to board certified anesthesiologist in an attractive, progressive general hospital. Excellent staff. Generous remuneration. Minimum amount of call with maximum vacation time. Write or call: Marvin Albert, M.D., World War II Veterans Memorial Hospital, Paddock Avenue, Meriden, Connecticut 06450. 203-237-5531.

Anesthesiologist—Two board eligible or certified anesthesiologist needed for large community hospital in the central part of the state.

Anesthesiologist—Position available in a medium sized hospital in north-central part of the state.

Anesthesiologist—To join three man group in a 180 bed community hospital. Inhalation therapy and respiratory physiology involved. Semi-rural area near the University of Connecticut. Contact Anesthesia Associates, P.O. Box 23, Willimantic, Connecticut 06226.

Chest Clinic Physician—35 hours. Excellent fringe benefits. Training available as needed. Contact: James A. Hanaghan, M.D., Director, Division of Tuberculosis Control, Hospital Care and Rehabilitation, Office of Public Health, 79 Elm Street, Hartford, Connecticut 06515.

Director Environmental Health—Provide medical advice and counsel in all aspects of environmental health. Experience as either a general practitioner, surgeon or orthopedic man, with industrial medicine. Salary open. Contact: BK Associates, Hartford. Phone: 527-9107.

Emergency Room—Ambulatory Services—Full time position in 250 bed community hospital. Excellent new facilities. Group renders emergency and primary care to 75,000 population. Apply Richard P. Fredericks, Executive Vice President, Bristol Hospital, Brewster Road, Bristol, Connecticut 06010. Phone 589-2000.

Family Practice—Suburb of Hartford. Physician in search of an associate. Convenient location. Attractive community.

Family Practice—Northeastern sector of the state. Convenient to Boston and Rhode Island. Associate type arrangement possible with physician presently in practice.

Family Practice—Southwestern Litchfield County. Community hospital. Conveniently located.

Family Practice—Small community in the northwestern corner of the state requires a practitioner. Community search committee. Contact: Henry L. Barnett, M.D., Sheffield, Massachusetts.

Family Practice—Physician needed to assume practice. Home and office space available. Central Connecticut. Excellent location. Contact: William W. Dickinson, M.D., 63 Hill Avenue, Yalesville, Connecticut 06492.

Family Practice—Staff of the Bristol Hospital wishes to assist a new physician with setting up practice. Contact: Stuart Falk, M.D., 3 Woodland Street, Bristol, Connecticut 06010.

Family Practitioner or Internist—Wanted to assume an active practice in southern Connecticut. Hour from NYC. Physician wishes to retire soon.

Family Physician—Young practitioner needed to join three other family doctors in medium-volume, quality patient care practice. Modern practice in beautiful and affluent Long Island Sound community, 50 minutes from New York City. No obstetrics. No pediatric patients less than one year old. Salary first year leading to full partnership or corporate benefits in three years. Best possible opportunity to create and realize full potential in a versatile family practice in a stimulating and well staffed medical community.

Family Practitioner or Internist—Association with a general practitioner. Good practice in an urban setting in central Connecticut. No OB or major surgery. Part-time university student health work, if desired.

Family Practice or Internal Medicine—Associate needed to assume an active practice from physician who wishes to retire at the end of 1973. Fully equipped, modern office. Less than an hour to NYC.

Family Practitioner or Internist—Needed in growing community in central Connecticut. Associate arrangement with physician who has a large practice and wants to consider retiring.

Family Practice—Associate to join young physician in attractive community east of Hartford. Community hospital. Good location.

General Practice, Internal Medicine, and ENT: Needed in town of Torrington. 200 bed hospital. 50 physicians, over 50,000 population. Contact Joseph F. J. Curi, M.D., Chairman of Search Committee, Charlotte Hungerford Hospital, Torrington, Connecticut 06790. 203-482-0441.

General Practice and Internal Medicine—Both for solo and hospital based practice. Medium sized, north central community. Community hospital. Needed immediately.

General Medicine and Internal Medicine—Northwestern Connecticut community seeking to attract practitioners. Associate type practice possible.

Home and Hospital for the Aged in search of internist or general practitioner interested in geriatric medicine. Responsible for staff physicals. Salary and possible housing.

Industrial Medicine—Internist needed for large Connecticut employer. Contact: R. J. Leonard, M.D., Medical Supervisor, Pratt & Whitney Aircraft, East Hartford, Connecticut 06108.

Internist—Certified or Board eligible. Wanted immediately to assume very active practice in Fairfield County, Connecticut. One hour from New York City. Gross over $200,000. Hospitals conveniently located. Privileges assured. Must be personable and have a good personality. Send resume and date available.

Internist—Four man group in Fairfield, Connecticut, in search for an associate. Send resume to the Physician Placement Service.

Internist—A third Internist is needed to join two other Internists in the town of Manchester, Connecticut. Office located across the street from a 300 bed community hospital which is currently in the second of a three stage building program. Manchester is located fifteen minutes from Hartford, one hour from New Haven, one hour and a half from Boston and two hours from New York City. For further information contact: Harold J. Lehmus, M.D., or David L. Warren, M.D., 56 Haynes Street, Manchester, Connecticut 06040. Telephone: 203-646-1167.

Internist—General medicine. To join young internist in growing practice. Early partnership. New London-Mystic area.

Internist—Several opportunities with the State of Connecticut. Contact John J. Crowley, Personnel Administrator, 79 Elm Street, Hartford, Connecticut 06115 or Edmund Beutsch, Veterans' Home and Hospital, Rocky Hill, Connecticut.

Internist—Two internists, hospital based, seeking expansion into larger group.

Internist—Shore community only a few miles from New Haven. Physician will assist with establishing practice.

Cardiologist—Board certified to assume active practice in greater New Haven area.

Internist—Board certified or eligible with interest in allergy, rheumatology or infectious diseases wanted to associate with Grove Hill Clinic. W. T. Livingston, M.D., Grove Hill Clinic, New Britain, Connecticut.

Internist—Third physician needed for internal medical practice in Hartford.

Internist—Need for cardiologist in the Waterbury area.

Internist—Preferably Board Certified or eligible, for chronic disease and cancer hospital having sections for TB in adults and children. 35 hr. week, 11 paid holidays, sick leave, 3 weeks vacation after one year of service. Salary level: $23,227-28,333. Paid health insurance and minimum charge for life insurance. Apartment available for physician with small family. Write Medical Director, Uncas-on-Thames Hospital, Norwich, Connecticut 06360.

Internist—Associate needed to join two other internists in southern Fairfield County. Conveniently located. Community hospitals in the vicinity.

Internist—Medium sized Berkshire Hills Community in northwest Connecticut witheasy access to Hartford, New York, Boston. Modern 85 bed hospital with new coronary intensive care unit. Academic affiliations available. Opportunities available with another ABIM certified specialist for multi-specialty group practice to provide guaranteed free time. Initial competive subsidy.

Internist or Family Practitioner—Needed for the Groton-New London area. Possible association with another practitioner.

Medical Director—For corporate headquarters, manufacturing in the Waterbury area. Responsible for employee exams and treatment, direction and participation. Requires industrial experience or general practice background. Salary to high $30's. Contact: BK Associates, Hartford. Phone: 527-9107.

Primary Physician needed for the town of Stonington. Coastal location. Town search committee: James M. Spellman, Stonington, Connecticut.

Occupational Medicine—Responsible for employee examinations and physicians. Background should include either practical or internal medicine. Two (2) different openings with

(2) different companies. Salary open to high $20's. Contact: BK Associates, Hartford. Phone: 527-9107.

Ophthalmologist—Four vacancies. Each in the larger cities of Connecticut. Immediate opportunities.

Orthopedics—Immediately available due to sudden illness. Needed to assume active solo practice in rental, fully equipped and newly furnished 1700 square foot office in prestigious building and location. Write or call Howard Green, M.D., 111 East Avenue, Norwalk, Connecticut 866-0570 or 866-8100.

Orthopedic Surgeon—Associate needed to join three other orthopedic surgeons in central Connecticut.

Otolaryngologist—Associate needed to join two other physicians in an urban area in central Connecticut.

Otolaryngologist—Central Litchfield County in search for specialist.

Pathologist—Small community hospital in the greater New Haven area.

Pediatrics—Suburb of New Haven. Physician in search of associate.

Pediatrician—Send resume to Administrator, Day Kimball Hospital, Putnam, Connecticut. Search committee wishes to attract physicians.

Pediatrics—Needed for growing community in the central Connecticut area. Small community hospital. Search Committee willing to assist with the establishing of a practice.

Pediatrics—Third pediatrician needed to join two young Board certified, Fellows of AAP, eastern part of the state. Large, general pediatrics practice. Good first year salary with corporate benefits and full partnership after two years.

Pediatrics—Additional coverage needed in the New London area.

Pharmaceutical Company Physicians—Openings in Clinical Pharmacology, Clinical Research, and/or Medical Communications and Industrial Medicine in Connecticut and Mid-Atlantic states. G.P.'s as well as specialists desired. No prior industry experience necessary. Recent med school graduates welcomed. For further information please contact: Martin C. Sampson. M.D., F.A.C.P. Sampson-Neill Associates, Inc., 543 Valley Road, Upper Montclair, N.J. 07043. (201) 783-9600

Psychiatrist—For greater Bridgeport Community Mental Health Center to be opening in October, 1972. Contact: Robert J. McCully, 1862 East Main Street, Bridgeport, Connecticut.

Psychiatrists—Needed for state facility. Write Superintendent, Norwich Hospital, Norwich, Connecticut 06360.

Psychiatrists—Openings in mental hospitals and mental health clinics under the auspices of the State of Connecticut. Write Personnel Administrator, Department of Mental Health, 90 Washington Street, Hartford.

Psychiatrist—Attractive suburban community north of Hartford has opportunity for psychiatrist in professional grouping.

Surgery—Thoracic surgeon who will do general surgery or general surgeon with thoracic subspecialty. Central Connecticut. Conveniently located between Hartford and New Haven. Medium sized community.

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NEW BOOKS RECEIVED

Books received for review are acknowledged in this department and such acknowledgement must be regarded as a sufficient return for the courtesy of the sender. Selection will be made for review in the interests of our readers and as space permits.

Embryology for Surgeons. The Embryological Basis for the Treatment of Congenital Defects. Stephen Wood Gray, A.B., M.A., Ph.D. and John Elias Skandalakis, M.D., M.S. (Surg.), Ph.D., F.A.C.S. W. B. Saunders Company, Philadelphia, London, and Toronto, 1972. pp. 895.

Civilization & Science in Conflict or Collaboration? A Ciba Foundation Symposium. Elsevier, Excerpta Medica, North-Holland. Associated Scientific Publishers. Amsterdam, London, New York, 1972. pp .217.

Mental Health Training and Public Health Manpower. Stephen E. Goldston, Ed.D., M.S.P.H. and Elena Padilla, Ph.D. National Institute of Mental Health, Rockville, Maryland, July, 1971. pp. 294. For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. $2.75 (paper cover).

General Urology. Seventh Edition. Donald R. Smith, M.D. Lange Medical Publications, Los Altos, California, 1972. pp. 427.

Review of Medical Microbiology. Tenth Edition. Ernest Jawetz, Ph.D., M.D., Joseph L. Melnick, Ph.D., and Edward A. Adelberg, Ph.D. Lange Medical Publications, Los Altos, California, 1972. pp. 504. $8.00.

Malnutrition. Its causation and control. Volume 1. John R. K. Robson in collaboration with Frances A. Larkin, Anita M. Sandretto and Bahram Tadayyon. In two volumes. Gordon and Breach. New York, London, Paris. 1972. pp. 311.

Malnutrition. Its causation and control. Volume 2. John R. K. Robson in collaboration with Frances A. Larkin, Anita M. Sandretto and Bahram Tadayyon. In two volumes. Gordon and Breach. New York, London, Paris. 1972. pp. 283.

Current Pediatric Diagnosis and Treatment. Second Edition. C. Henry Kempe, M.D., Henry K. Silver, M.D., and Donough O'Brien, M.D., F.R.C.P., and Associate Authors. Lange Medical Publications. Los Altos, California, 1972. pp. 982. $12.00

Urinary tract infection and its management. Edited by Donald Kaye, M.D. With 88 illustrations. The C. V. Mosby Company, Saint Louis, 1972. pp. 278. $22.50

Practice of Surgery: Current Review. Volume I. Walter F. Ballinger, M.D. and Theodore Drapanas, M.D. With 140 illustrations. The C. V. Mosby Company, Saint Louis, 1972. pp. 309. $23.50

Synopsis of Surgery. Richard D. Liechty, M.D. and Robert T. Soper, M.D. With 669 illustrations. Second edition. The C. V. Mosby Company, Saint Louis, 1972. pp. 1053. $15.50

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Special Article

An Analysis of The 1971 Amendment To The Connecticut Medical Practice Act

Blair L. Sadler, J.D., John Q. Tilson, J.D. and Alfred M. Sadler, Jr., M.D.

In 1965, Oklahoma amended its state medical practice act (originally designed to limit the practice of medicine to physicians) to provide: *"NOTHING IN THIS ARTICLE SHALL BE SO CONSTRUED AS TO PROHIBIT . . . SERVICE RENDERED BY A PHYSICIAN'S TRAINED ASSISTANT, A REGISTERED NURSE, OR A LICENSED PRACTICAL NURSE, IF SUCH SERVICE BE RENDERED UNDER THE DIRECT SUPERVISION AND CONTROL OF A LICENSED PHYSICIAN."*[1] Aware that the increasing complexity of medical practice and the rising demand for medical services were creating added pressures on the physician to delegate to other health professionals certain functions previously considered to be exclusively those of the physician, the Oklahoma statute encouraged innovation by protecting both the physician and the person to whom tasks were delegated. Similar statutes were enacted in Colorado (1963),[2] Kansas (1964),[3] and Arizona (1969).[4] Although all of these laws followed the same principle, they were broader in scope because they permitted delegations by physicians to "any person."

As health care becomes more specialized, the number of health occupations continues to expand. More than 25 licensed health occupations are regulated by 794 statutes in the various states and the District of Columbia and there is considerable pressure to license others.[5]

At a time when more health occupations seek licensure, many experts conclude that current health licensure laws are woefully inadequate.[6,7,8,9] These laws fail to solve problems of educational obsolescence and provide barriers to educational innovation, effective delegation of tasks, and innovation in manpower utilization. Moreover, they do not solve effectively the problem of the unethical or incompetent practitioner.

In recent years, the American Medical Association,[10] the American Hospital Association,[11] and the Department of Health, Education, and Welfare[12] completed studies of licensure and certification of health personnel. All three conclude that traditional licensure for health personnel has failed. All three urge that states observe a "moratorium on licensure" of new categories of health personnel. (A statement on "State Licensure of Health Care Personnel" issued by the Connecticut Hospital Association in January, 1971, reached the same conclusion.)

As an immediate alternative to licensure, the AMA, AHA, and HEW reports contain similar proposals—to amend state medical practice acts. The AMA report states: "The Council on Health Manpower and the Board [of Trustees] recommend that state legislatures be urged to amend state medical practice acts to remove any barriers to increased delegation of tasks to allied health personnel by physicians."

The AMA report continues: "Such an amendment might be phrased as follows: *NOTHING IN THIS ARTICLE SHALL BE SO CONSTRUED AS TO PROHIBIT SERVICE RENDERED BY A PHYSICIAN'S TRAINED ASSISTANT, A REGISTERED NURSE, OR A LICENSED PRACTICAL NURSE, IF SUCH SERVICE IS RENDERED UNDER THE SUPERVISION, CONTROL AND RESPONSIBILITY OF A LICENSED PHYSICIAN."*[13] This is nearly identical to the 1965 Oklahoma law except that it does not require "direct" supervision, control and responsibility.

In an article entitled "Liability for Use of Paramedical Personnel" in the February, 1971, issue of *Connecticut Medicine*, Mr. Richard P. Bergen, a

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MR. BLAIR L. SADLER, Assistant Professor of Law, Yale University School of Medicine; Co-Director of Yale Trauma Program, New Haven, Connecticut.

MR. JOHN Q. TILSON, Counsel, Connecticut Hospital Association, New Haven, Connecticut.

DR. ALFRED M. SADLER, JR., Assistant Professor of Surgery, Yale University School of Medicine; Director of Yale Trauma Program, New Haven, Connecticut.

nationally recognized authority on legal aspects of health personnel and Director of the AMA's Legal Research Department, focused on an important aspect of the use of new health personnel—*protection of the physician.* He states: "*Protection for the physician in the use of new unofficial paramedical personnel may be obtained by amending the particular state's medical practice act. A few grant general authority to physicians to use competent assistants, substantially at the physician's discretion. One of the best provisions is that in the Oklahoma Act. . . .*" He then quotes the Oklahoma law discussed above. Mr. Bergen continues: "*Where strict compulsory licensing laws are unreasonably impeding the effective use of new paramedical personnel, a statutory amendment along this line might be advisable.*"[14] In 1971, several states (including Arkansas, Tennessee, New Hampshire and Utah) amended their medical practice acts along the lines of the 1965 Oklahoma law as advocated by the AMA and by Mr. Bergen.

In 1969, a "Statement of Dependent Nursing Functions" was developed by the Connecticut Nurses' Association, the Connecticut League for Nursing, the Connecticut State Medical Society, and the Connecticut Hospital Association. That statement is consistent with these developments in recognizing that "*the increasing complexity of medical care . . . has made it necessary for the physician to delegate to registered nurses certain functions previously considered to be exclusively the practice of medicine.* Such delegation properly defined, controlled and administered is of benefit to the care of patients, and, in emergencies, may provide prompt lifesaving action by the registered nurse when the physician is not on the scene."[15] (emphasis added)

At a conference on "Dependent Nursing Functions" held in New Haven on March 24, 1971, and sponsored jointly by the Connecticut State Medical Society, the Connecticut Nurses' Association, and the Connecticut Hospital Association, a concern frequently expressed was uncertainty about what Connecticut law would allow regarding the delegation of tasks. The majority of conference participants (including representatives from medicine, nursing, hospital administration, and the law) stressed the need for more flexible laws to allow innovation in health manpower utilization.

In keeping with all these developments, An Act Concerning Assistants to Physicians and Surgeons (Public Act 717) was introduced by Senator Stanley Pac (New Britain) to amend the Connecticut Medical Practice Act. *The Act, which received strong bipartisan support in both houses of the legislature, was signed by Governor Thomas J. Meskill on July 9, 1971, and became effective on October 1, 1971.* The bill adopts the precise language recommended by the AMA and states that the provisions of the Connecticut Medical Practice Act will not apply: "*TO ANY PERSON RENDERING SERVICE AS A PHYSICIAN'S TRAINED ASSISTANT, A REGISTERED NURSE, OR A LICENSED PRACTICAL NURSE IF SUCH SERVICE IS RENDERED UNDER THE SUPERVISION, CONTROL AND RESPONSIBILITY OF A LICENSED PHYSICIAN. . . .*"

Public Act 717 codifies the authority of the physician to delegate new, as well as commonly accepted, medical tasks to two types of licensed personnel (the registered nurse and the licensed practical nurse) and to a new type of unlicensed personnel (the physician's trained assistant). Clearly, the immediate impact of the new law is to provide the opportunity for improved utilization of the first two groups because many registered nurses and licensed practical nurses are now practicing in Connecticut. Aware of these developments and relying on the AMA, AHA, HEW, and CHA statements, the sponsors of Public Act 717 believed it would be unwise to define strictly the scope of function of a "physician's trained assistant" at this time.

Public Act 717 should help to protect health professionals from unwarranted malpractice claims. If a physician's trained assistant, registered nurse, or licensed practical nurse is negligent in performing delegated medical tasks, naturally they (as well as the supervising physician) will be legally responsible. However, Public Act 717 removes the possibility of a successful negligence action on the sole grounds of delegation to an unlicensed "physician's trained assistant." Actual negligence must be shown. Malpractice insurance is available from several major companies for both the physician's assistant and the supervising physician.

In light of the clear legal precedent for amending medical practice acts established with the Oklahoma law of 1965; the official AMA report on licensure; the statutes subsequently enacted in numerous other states; the explicit recommendations made by recognized authorities including Richard Bergen in the February, 1971 issue of *Connecticut Medicine*; the Joint Statement on Dependent Nursing Functions; and the concern raised at the March 24, 1971, meeting on Dependent Nursing Functions about the need for legal reform; it is surprising that the

Connecticut State Medical Society opposed the bill at the public hearings, and sent letters to Governor Meskill urging that it be vetoed. Further, an unsigned article entitled "Forewarned is Forearmed—Governor Signs Physician's Assistant Bill" appeared in the August, 1971 issue of *Connecticut Medicine* strongly criticizing Public Act 717.[16] Because the article contains several inaccuracies, we believe that clarification is in order.

The article states that: "At the opening of the 1971 General Assembly, the Society elected to follow the advice of the AMA Council on Health Manpower regarding the promotion of legislation at this time to cover the utilization of 'physician's assistants' in medical practice. . . ."[17] Yet, the Medical Society refused to support the enactment in Connecticut of the precise language recommended by the AMA Council on Health Manpower as embodied in Public Act 717.

The article asserts that the Connecticut State Medical Society supported "substitute wording for all bills under consideration" and favored language that would make it "legal for the physician to delegate medical practice procedures to a qualified assistant instead of making it legal for assistants to practice medicine under physician supervision."[18] Except for semantics, we are unable to discern any significant difference between these two statements.

The article further states that Public Act 717 "will establish a most dangerous precedent, and is not at all equivalent to authorizing doctors of medicine to utilize the services of qualified assistants in carrying on and expanding the scope of their medical practices."[19] This bewildering statement appears to be made without awareness of the 1965 Oklahoma law, the officially recommended AMA position, statutes enacted in various states, or the recommendations of Attorney Bergen. Nor does this conclusion take cognizance of the statement in the official AMA report immediately following the recommended language: "The amendment of medical practice acts as suggested above would codify the physician's recognized right to delegate patient care functions to competent personnel consistent with the patient's welfare, *as well as the delegatee's right to participate in the practice of medicine, and might serve to reassure and encourage physicians to innovate in the use of manpower.*"[20] We fail to find a meaningful difference between the "acts, tasks or functions" delegated by a physician (under the Medical Society proposal) and the "rendering of services" delegated by a physician (as expressed in Public Act 717).

The lengthy alternative proposal suggested by the Medical Society does contain one disturbing difference from Public Act 717. Under Public Act 717, a physician is able to delegate any medical task that *he* believes a registered nurse, a licensed practical nurse, or a physician's trained assistant can perform, consistent with patient safety and welfare. But, conceivably, a physician could make a delegation that far exceeds the qualifications of the person (to whom it is delegated) to perform. This would constitute a negligent delegation and the physician would be held responsible. But under the proposed Medical Society wording, "the qualification of an assistant . . . to perform such delegated acts, tasks, or functions *shall be conclusively presumed if such assistant has previously been licensed under the provisions of any state law in an allied service field of patient care.*"[21] (emphasis added) Under this proposal, a physical therapist licensed in Nevada or a radiologic technician licensed in Mississippi would "be conclusively presumed" to be "qualified" to perform an open-heart operation or transplant surgery if so delegated by a licensed physician. Is such a radical proposal consistent with a patient's welfare?

In criticizing Public Act 717, the article also asserts: "From the standpoint of professional responsibility (including malpractice actions) it should be the physician—not the assistant—who should have the protection of law."[22] However, Public Act 717 clearly protects both the physician and the assistant. As was stated by Richard Bergen in his February, 1971, article in *Connecticut Medicine,* such an amendment as Public Act 717 or as adopted in Oklahoma *"is one of the best ways of providing protection for the physician."*[23]

The last portion of the August, 1971, article focuses on the second part of Public Act 717 that provides: *"EXCEPT THAT THIS SECTION SHALL NOT AUTHORIZE ANYONE TO PRACTICE OPTOMETRY AS DEFINED IN CHAPTER 380 OF THE GENERAL STATUTES OR TO PRACTICE DENTISTRY OR DENTAL HYGIENE AS DEFINED IN CHAPTER 379 OF THE GENERAL STATUTES, AS AMENDED."* The article charges that "if signed into law the effect of this exclusion would be to disqualify hundreds of competent technicians who have been trained by ophthalmologists and who are presently performing procedures under the physician's supervision and control. . . ." The article also states that the "ophthalmologists in particular, may be adversely affected by the law's 'practice of optometry' exclusion since the utilization of trained technicians in their practices may have been placed in 'legal limbo' by its enactment."[24] It is impossible to reconcile these alleged concerns with the language of the law. Naturally the Medical Practice Act (*"this section"*) does not authorize anyone to practice optometry since that is what the optometry statute (Chapter 380) does. These words are not restrictive; they merely refer back to Chapter 380. Moreover, the words: "As defined in Chapter 380" make it very clear that no new definition of optometry is intended by Public Act 717.

Consequently, we submit, the only reasonable reading of Public Act 717 does no damage to any health specialty, including ophthalmology. Ophthalmologists traditionally have used office personnel who work under their supervision and control. There is nothing in Public Act 717 that makes any change in this practice. We have not heard of a single report that an ophthalmological technician has been "disqualified" from practice because of the new law.

In summary, we believe that Public Act 717 has introduced needed flexibility and encourages innovation in the health care field by codifying the authority of physicians to delegate new, as well as traditionally accepted, medical tasks to registered nurses, licensed practical nurses, and physician's trained assistants. It does not permit any of these personnel to practice medicine independently, because all must be working under the "supervision, control and responsibility of the licensed physician."

It remains up to each hospital (or other health care institution) and each physician to decide under which circumstances additional tasks should be delegated to each of these three types of health personnel. Through the enactment of Public Act 717, the basic legal authority to delegate has been firmly established. The legal authority carries with it the responsibility on the part of the physician to exercise discretion in judging the competence of the person involved and the nature of the tasks which can be delegated. In an age of specialization, increasing hospital costs, and rising demands for health services, Public Act 717 encourages the more efficient utilization of health personnel which should have a significant beneficial impact on health care delivery in Connecticut.

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1. Oklahoma Statutes Annotated, Title 59, Section 491, 1971.
2. Colorado Revised Statutes Annotated, Section 91-1-6(3)(m), 1963.
3. Kansas Statutes Annotated, Section 65-2872(g), 1964.
4. Arizona Revised Statutes Annotated, Section 32-1421(b), Supplement 1971.
5. Pennell, Maryland: "State Licensing of Health Occupations," U.S. Public Health Service, Publication No. 1758, 1969.
6. Report of the National Advisory Commission on Health Manpower, U.S. Government Printing Office, 1967.
7. Forgotson, Edward; Bradley, Charles and Ballenger, Martha: "Health Services for the Poor—The Manpower Problem: Innovations and the Law," *Wisconsin Law Review*, 1970:756-789, 1970.
8. Forgotson, Edward; Roemer, Ruth and Newman, Roger: "Licensure of Physicians," *Washington University Law Quarterly*, 1967:249-331, 1967.
9. Leff, Arthur: "Medical Devices and Paramedical Personnel: A Preliminary Context for Emerging Problems," *Washington University Law Quarterly*, 1967:332-399, 1967.
10. "Licensure of Health Occupations," a report by the Council on Health Manpower of the American Medical Association, adopted by the House of Delegates of the AMA, December, 1970.
11. "Statement on Licensure of Health Personnel," a report by the American Hospital Association Special Committee on Licensure of Health Personnel, approved by the AHA, November 18, 1970.
12. "Report on Licensure and Related Health Personnel Credentialing," to the Congress of the United States, from the Department of Health, Education, and Welfare, July 28, 1971.
13. "Licensure of Health Occupations," AMA report, op. cit., page 6.
14. Bergen, Richard P.: "Liability for Use of Paramedical Personnel," *Connecticut Medicine*, 35:78-80, February, 1971.
15. Statement on Dependent Nursing Functions, Connecticut State Medical Society, Connecticut Nurses' Association, and Connecticut Hospital Association, 1969.
16. Legislative Report, "Forewarned is Forearmed: Governor Signs Physician's Assistant Bill," *Connecticut Medicine*, 35:521-527, August, 1971.
17. Ibid, page 521.
18. Ibid, page 521.
19. Ibid, page 522.
20. "Licensure of Health Occupations," AMA report, op. cit., page 6.
21. Proposed Bill, Connecticut State Medical Society, unpublished, 1971.
22. Legislative Report, op. cit., page 522.
23. Bergen, op. cit., page 80.
24. Legislative Report, op. cit., page 522.

OBITUARY

Hyman M. Chernoff, M.D.

1918-1972

Dr. Hyman M. Chernoff died suddenly after a short illness on August 31, at Glen Falls General Hospital in Glen Falls, New York while vacationing. Dr. Chernoff was 54 years old and resided in New Haven.

Dr. Chernoff graduated from the New York University Medical School in 1943. He served as a captain in the Army Medical Corps. After completing his military service, Dr. Chernoff was engaged in the private practice of cardiology.

Dr. Chernoff gave up his private practice in cardiology to become director of the department of electrocardiography at the Memorial Unit of the Yale-New Haven Hospital. He was associate professor of clinical medicine at the Yale School of Medicine and was on the attending staff of the Yale-New Haven Hospital, Hospital of St. Raphael and West Haven Veteran's Hospital.

He developed such skill in the field of electrocardiography that he was considered one of the most outstanding electrocardiographers in the nation by his colleagues. Dr. Chernoff was a regular contributor to *Connecticut Medicine*, the journal of the Connecticut State Medical Society. He was an outstanding teacher and he had many physicians coming from as far away as Japan to study with him. Dr. Chernoff not only possessed a superb knowledge of his specialty, but he also had the rare gift of teaching this difficult field of medicine in such a manner that studying with him became an exciting and rewarding experience. He was the first recipient of the Ben Harris Award, an award given to the most outstanding teacher in the Memorial Unit of the Yale-New Haven Medical Center.

Dr. Chernoff devoted many hours each week to teaching despite his busy schedule in the EKG Laboratory. He always impressed his many students with a genuine love and devotion to this aspect of his work. He was never too busy to assist his colleagues in the interpretation of difficult tracings. Despite Dr. Chernoff's great achievements, he always was humble and truly sincere in his willingness to help others. This sincerity and outstanding ability was recognized by his many patients who remained grateful to him many years after he had ceased to be their physician.

Dr. Chernoff had recently completed a book entitled "Self Assessment in Electrocardiography" which has not yet been published, and he was in the process of writing another book on cardiac arrhythmia. He was co-author with the late Dr. Louis H. Nahum of a chapter on electrocardiography in Dr. Fulton's book on physiology.

Besides being a scientist, author, physician and teacher, Dr. Chernoff, a rabbi's son, remained faithful to the tradition of his religion. He taught his faith to his children, not only from books but also by setting an outstanding example of living according to the Ten Commandments. Those who were privileged to attend a celebration of the Sabbath in his home will cherish this memory forever.

We have lost not only a great physician and teacher, but also a good friend and true human being.

He is survived by his wife, Shulamith Scharfstein, two daughters, Deborah and Naomi, four sons, David, Jonathan, Daniel and Joshua; a brother and a sister.

Oscar Roth, M.D.

In Memoriam

Geiger, Arthur J., Harvard Medical School, 1931. Dr. Geiger was a practicing cardiologist in the New Haven area since 1933 until his retirement. He was the first president of the Connecticut Heart Association, a clinical professor of medicine, emeritus at Yale's School of Medicine and a member of the American College of Physicians. He was also a member of the New Haven County Medical Association, Connecticut State Medical Society and the American Medical Association. Dr. Geiger died August 20, 1972, at hs summer home in Provincetown, Massachusetts, at the age of 67.

Meeting Notices

GENERAL

September, 1972—May, 1973
6:00 p.m.-8:15 p.m.
Basic Sciences Related to Clinical Medicine
Lawrence and Memorial Hospitals
New London, Connecticut
Contact: Edward Gipstein, M.D.
Director of Continuing Medical Education

December 6—Wednesday
Semi-Annual Meeting CSMS House of Delegates
Sheraton-Park Plaza, New Haven

April 24, 25, 26, 1973
181st Annual Meeting of the
Connecticut State Medical Society
Hartford

CONNECTICUT MEETINGS

October 12—Thursday (2 p.m.)
"Changing Sexual Mores in a Changing Society"
Harold Rose, M.D., Baltimore, Maryland
Connecticut Valley Hospital, Middletown

October 17—Tuesday (10:30 a.m.)
"What is Sick About Our Society?"
Dana L. Farnsworth, M.D., Boston, Massachusetts
Connecticut Valley Hospital, Middletown

October 18—Wednesday (9 a.m.-4 p.m.)
Multidisciplinary Approach to Patient Care
"Roles and Responsibilities of
Selected Health Care Professionals in
Diagnosis, Prognosis and Treatment"
Panel Discussions—Case Histories—
Practical Applications.
Keynote Speaker: Frederick G. Adams, D.D.S., M.P.H., Dean of the Schools of Allied Health Professions, University of Connecticut
Sheraton-Park Plaza, New Haven
Registration and Reservations: CSMS (865-0587)

October 26—Thursday (8:30 a.m.-9:00 p.m.)
Symposium on Orbital Tumors
CSMS Section on Ophthalmology in Cooperation
with the Division of Ophthalmology,
University of Connecticut Health Center
Farmington, Connecticut
Registration Fee includes luncheon and dinner: $25.00
Contact: David W. Parke, M.D.
477 South Broad Street
Meriden, Conn. 06450

October 27—Friday (8:00 a.m.-4:45 p.m.)
Tenth Annual Orthopaedic Clinical Meeting
Newington Children's Hospital
Newington, Connecticut
Contact: Burr H. Curtis, M.D. 666-2461

November 7— Tuesday (10:30 a.m.)
"Depression . . . Differential Diagnostic and Treatment Considerations"
Leon Salzman, M.D., Albert Einstein
College of Medicine, New York City
Connecticut Valley Hospital, Middletown

November 2—Thursday (5:00 p.m.)
John Punnett Peters Lecture: "Changes in Medical Care Organization"
Sir John Brotherston, Scottish Home & Health Department, Edinburgh, Scotland.
Harkness Auditorium, Yale-New Haven Hospital, New Haven

November 9—Thursday (1 p.m. to 5 p.m.)
Symposium on "The Addictive Personality: Treatment and Prevention"
Speakers, Dialogue, Question-Answer Session
Hartford Hilton Hotel, Hartford

November 15—Wednesday (9 a.m.-4 p.m.)
Fourth Biennial Perinatal Seminar
"Amniocentesis in Diagnosis"
"The Decision for Abortion: Public or Private?"
The Auditorium of the
Connecticut General Life Insurance Co.
Bloomfield, Connecticut
Sponsored by the CSMS, the Hezekiah Beardsley Chapter of the AAP, Yale University School of Medicine and the University of Connecticut School of Medicine.
Reservations: CSMS—865-0587

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AUTUMN BOARD MEETINGS

"This is going to be a great year for our auxiliary!" remarked the young brunette who sat beside me as we rode along a Connecticut country road on a recent September afternoon. From the back seat, the doctors' wives agreed. We were returning from our first fall board meeting. Our new President Sue had been a happy hostess whose quiet home had been a haven from our own current household problems of the summer-litter, back-to-school, change-of-season variety. We wanted to help Sue because she was sincerely interested in our group. Besides making plans she had laid the groundwork for them. She had encouraged the opinions of every board member and had been able to combine and express them in motions approved by the majority.

Our mobile board meeting continued. We compared organizations we had known. We talked about what makes groups continue to be effective and we arrived at some conclusions. The original purpose of an organization can be lost in its purposeless activities. Constitutions and bylaws should be rescued from bulging folders and dusty boxes and exposed to the revealing sunlight of today. Times have changed. Members have changed. Needs have changed. A committee of old and new members can update a constitution and reprint it on paper bright enough to attract the attention of the most disinterested member. Copies can be distributed for discussion, approval, and direction.

Updating the constitution should be announced on the agenda of a meeting. An agenda is helpful because it reveals a plan. Poorly run meetings are due to lack of plans. In such situations problems outrun solutions, resulting in hasty action or confusion. Members should arrive at meetings aware of the agenda and ready to speak on problems in a brief, clear, and organized way.

Work in an organization can become cold and impersonal unless people strive to inject a warm personal note to everything they do in it. Members should be cordial and friendly. A firm stand can also be a gentle one. Disagreements can be expressed agreeably. Frustrated members will be reassured by such actions. It is wise to reconsider your own views to be sure they are based on reason, not emotion, principles not personalities, and always on the good of the organization.

Groups can be crippled when the membership splinters into hostile cliques—the new and the old members, the liberal and the conservative members, the chic and the dowdy members, the gay members versus the clique with a cause. Splintering can be prevented by members voting their own opinions rather than childishly playing follow the leader on each vote. Even one person, by fairmindedness and objectivity, can often bridge the gap between opposing sides of an argument.

One person with a sense of humor can lighten the burden of clubwork for everyone involved including herself. The problems of few clubs are life and death issues and should not be discussed as if they were. A smile, a pun, a compliment, an optimistic point of view will rescue a situation and save face for everyone heatedly involved. You can insure a great year for your own auxiliary by attending its next meeting armed with the ideas of our committee on wheels and other thoughtful ones of your own.

Third Annual Symposium
CONNECTICUT DIABETES ASSOCIATION

"New Concepts in the Treatment of Diabetes"

Thursday, November 9, 1972
Stratford Motor Inn
Stratford, Connecticut

Morning Session

Presiding: Philip Felig, M.D., Associate Professor of Medicine and Director, General Clinical Research Center, Yale University School of Medicine

10:00-10:45 A.M. "Insulin Allergy and the New Insulin" Rubin Bressler, M.D., Chairman, Department of Pharmacology, University of Arizona College of Medicine, Tucson, Arizona

11:00-11:45 A.M. "Transplantation in the Diabetic" Frederik C. Goetz, M.D., Professor of Medicine, University of Minnesota Medical School, Minneapolis, Minnesota

11:45-12:15 P.M. Panel Discussion: Drs. Bressler, Goetz and Felig

12:15-1:30 P.M. Buffet Luncheon

Afternoon Session

Presiding: Neil Auerbach, M.D., President, Connecticut Diabetes Association

1:30-2:15 P.M. "Treatment and Complications of Diabetic Ketoacidosis"—Robert F. Bradley, M.D., Medical Director, Joslin Clinic, Boston, Massachusetts

2:30-3:15 P.M. "The Role of Hyperlipemia in the Dietary Management of Diabetes"—Robert S. Lees, M.D., Massachusetts Institute of Technology, Cambridge, Massachusetts.

3:15-3:45 P.M. Panel Discussion: Drs. Bradley, Lees, and Auerbach

Sponsored by

The Connecticut Diabetes Association
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Production Of Myocardial Infarction During Revascularization Operations

Hultgren, H. N., et al in the *American Heart Journal* 82:624, 1971, reported observations on 50 patients equally divided between mammary artery implants and venous aorta coronary bypass grafts. Thirty four percent showed postoperative ECG changes of myocardial infarction and an additional 10 percent showed ischemic changes.

Tetracycline Treatment of Malaria

(*JAMA* 220:684, May 1, 1972, Colwell, E. J., et al) Tetracycline Hcl was evaluated in asymptomatic and acutely ill subjects naturally infected with chloroquine resistant strains of Plasmodium falciparum. Sixteen asymptomatic subjects of whom eight had recently experienced chloroquine treatment failures received 250 mg of tetracycline Hcl, four times daily for ten days. A presumptive radical cure was demonstrated in 12.

In the other four, treatment was discontinued within 72 hours because of symptomatic development.

Acutely ill subjects were assigned to one of two treatment groups. One group received 640 mg of quine sulfate, three times daily for three days, followed by 250 mg of tetracycline Hcl four times daily for ten days.

The other group received a similar course of quinine followed by a conventional course of chloroquine. A presumptive radical cure was demonstrated in 29 of 30 treated with the quinine-tetracycline regimen, and in 15 of 36 treated with the quinine-chloroquine regimen.

Cyclooctylamine Prevents Experimental Human Influenza

(*JAMA*, 220:837, May 8, 1972, Yasushi, T., et al). Four drops of a 4% solution through a dropper of cyclooctylamine was applied to the nostril every two hours for six daily doses starting at 8 A.M. It prevented overt influenza in susceptible subjects.

The degree and duration of febrile reactions were substantially diminished. The drug acts to prevent entrace of virus into cells.

Connecticut Medicine

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State of Connecticut

County of New Haven ss.

Before me, a Notary Public in and for the State and county aforesaid, personally appeared Dr. Wm. F. Eckhardt, who, having been duly sworn according to law, deposes and says that he is the Acting Editor of the Journal of The Connecticut State Medical Society and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of October 23, 1962; Section 4369, Title 39, United States Code.

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*Levine, S.: "Angina Pectoris and Emotional Overlay," Scientific Exhibit presented at the Annual Meeting of the Maine Medical Association, Kennebunkport, Me., June 13-15, 1971.

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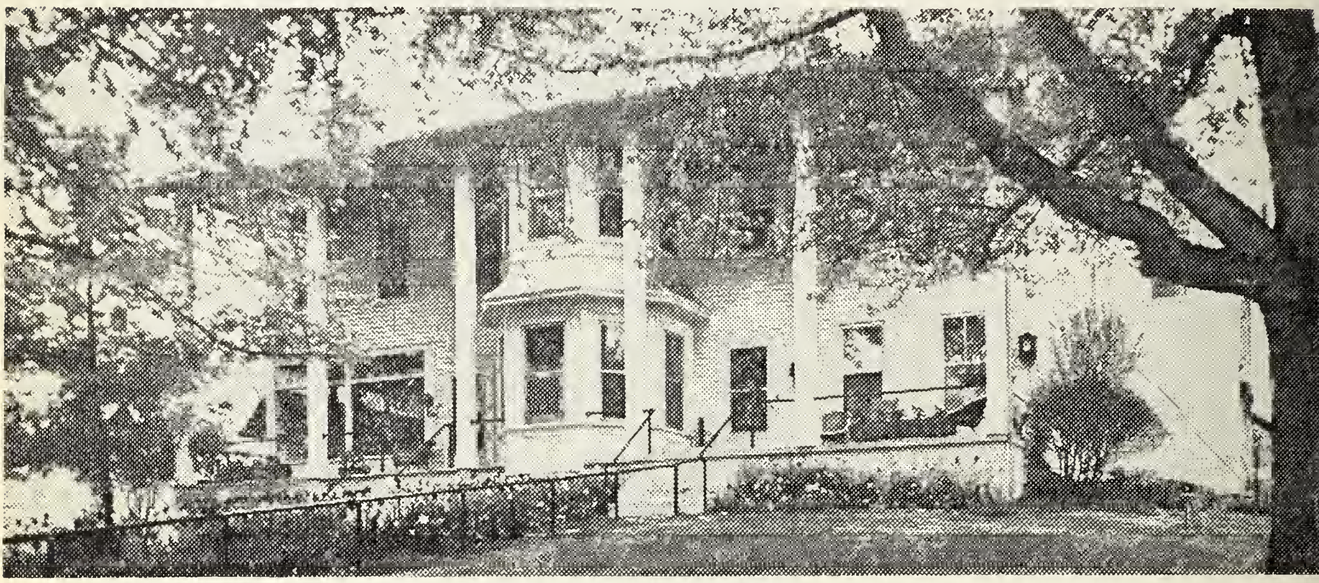

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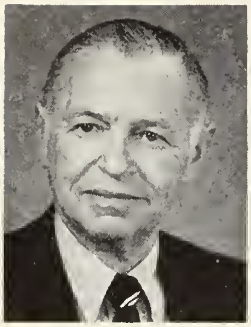
THE PRESIDENT'S PAGE



The probability that a national health insurance program will be passed by the next session of Congress becomes more and more a certainty, but the nature of that program and its details have yet to be formulated. The purpose of this column is neither to recommend a wringing of hands nor a last ditch stand of physicians at the barricades, either of which would be fruitless. What will be, will be. As good citizens we must obey the law and learn to live with it, but if we, in good conscience, recognize weaknesses in it, we can plan to ameliorate any adverse impact it may have on health care delivery. It is difficult to neutralize the constant bombardment of the public with ill-considered and inaccurate, hysterical statements emanating from those in high places, the effect, if not the intent of which, is to inflame the people. To quote Sen. Edward Kennedy directly, "Everywhere I travel I meet people concerned with the high cost, the low accessibility and the poor quality of health care. 'Don't get sick in America', we are told and 200 million people say 'amen'." If "200 million" is literally accurate, the first word spoken by new-born and infant is not mama but "amen". The good Senator continues, "We have heard hospital administrators boast of collecting over 95% of their bills — they do it by turning away the poor. We have heard the same administrators say they do not know why their emergency rooms are empty [sic] when a sign over the entrance demands $25 for the privilege of walking through the door". This strains one's credulity, and is the sort of panic-button pushing which is a significant factor in our '*health care crisis*'.

If we are fair-minded and aware of what is happening across the country we must realize that there are large areas, and large segments of the population in dire need of improved health care, but there are larger areas and larger segments of the population where health care is good and where crash programs would be inappropriate. The concept of prepayment, voluntary or compulsory, should not produce a shock state among physicians, but the nature of the delivery system can well be of great concern to us. We are not ready to concede that the health maintenance organization is a great step forward in controlling efficiency, quality of care or costs. In fact, if past experience is a measure, there is considerable doubt as to its being a viable solution, and certainly not one to be made available to 80% of the population, as urged by its proponents. There are many who feel strongly that the health care foundation offers much greater promise. It is to find answers to just such questions that the Connecticut State Medical Society has embarked on its Ambulatory Care Study, and it is to obtain these answers that the cooperation of Connecticut physicians is being solicited.

One of the major factors in the high cost of health care is overutilization of expensive hospital care. A well-structured, quality-controlled ambulatory care system could serve to cut health care costs appreciably, hence, any system of national health insurance must assure and encourage adequate ambulatory care.

David A. Grendon, M.D.
President

Sipple Syndrome And Sudden Death

Kishan N. Tandon, M.D.
Henry Mannix, M.D.

The association of pheochromocytoma of the adrenal gland with thyroid carcinoma was first reported by Eisenberg and Wallerstein in 1932. This was a 63 year old woman with a 10 year history of an enlarged thyroid gland and without known hypertension. At autopsy bilateral pheochromocytomas were found. The thyroid gland was replaced by a large tumor mass and the microscopic diagnosis was papillary adenocarcinoma.[1]

In 1952 Decourcy and Decourcy[2] reported that, "a considerable and, we believe, a significantly high percentage of patients with pheochromocytoma have had coexistent diffuse or nodular goitre or thyroid carcinoma." There were no other statements in the literature suggesting an increased incidence of carcinoma of the thyroid gland in pheochromocytoma until 1961 when Sipple[3] reported the incidence of thyroid carcinoma in pheochromocytoma patients to be fourteen times higher than in the general population.

In 1965, Schimke, Hartmann & Williams[4,5] documented that thyroid carcinoma in these patients was invariably of the amyloid producing medullary variety as described by Hazard, Hawk and Crile[6] in 1959. Nearly sixty cases of Sipple Syndrome (pheochromocytoma and medullary carcinoma of the thyroid) have been reported in the English literature to date. In more than half of the patients, the diagnosis of thyroid carcinoma preceded that of pheochromocytoma and the reverse was true only in one out of ten cases.[7]

Recent work[8] has demonstrated that serum calcitonin levels, which can be determined quite accurately, will rise in the presence of medullary carcinoma. Patients with medullary carcinoma or with a family history of this condition should have serial determinations carried out. Serial urine studies for catecholamines or their metabolites should also be performed in this group of patients to detect occult argentaffin tumors.

The purpose of this report is to present a patient with Sipple Syndrome who died suddenly due, apparently, to catecholamine overactivity, and to emphasize that patients with medullary carcinoma need regular follow up care. Since the condition is familial, families of patients with medullary carcinoma should be evaluated.

Case Report

A white female underwent a right thyroid lobectomy, presumably for benign adenoma, in 1956 at the age of 36. Ten years later, she presented with a lump in the left lobe of the thyroid and an irregular heart beat. The patient gave a history of tension headaches and paroxysmal tachycardia which was controlled with Quinidine. Physical examination revealed a normotensive individual and positive findings were limited to the left lobe of the thyroid where a 2 centimeter firm mass was palpable. Surgical excision of the mass was carried out. A diagnosis of undifferentiated carcinoma was made on the basis of the frozen section. Surgery was terminated in view of this diagnosis. On permanent sections with special stains, a diagnosis of medullary carcinoma was made. (Fig. 1) The patient underwent a left lobectomy and isthmectomy. No nodes were palpable. At this time the slides from 1956 were reviewed and interestingly enough one area revealed the presence of neoplastic cells with identical histology to that noted this time in 1966. She was studied for pheochromocytoma and several blood pressure determinations, V.M.A. and serotonin were all found to be within normal limits. She was discharged and 5 years later (June 1971) she was brought to the Emergency Room in the state of shock. Her husband stated that she had been having abdominal cramps, burning pain in the abdomen associated with nausea and vomiting for several weeks. He noted that the symptoms were worse when brought to the hospital. Shortly after her arrival in the Emergency Room she had a cardiac arrest. Vigorous attempts at resuscitation were unsuccessful, although no blockers were used. She died approximately three hours after her arrival in the Emergency Room. At autopsy, bilateral pheochromocytomas of the adrenal glands were found; the larger of the two being 8 centimeters in size and wighing 110 grams. (Fig. 2, 3) No evidence of spread from the medullary carcinoma of the thyroid was found.

Discussion

Patients with pheochromocytoma have been known to go into hypertensive as well as hypotensive crisis. Before the introduction of adrenergic blocking agents, the operative removal of pheochromocytoma had a mortality rate of up to 25 percent (Graham 1951)[9]. The use of a-adrenergic blocking agents such as Phentolamine or Phenoxy-

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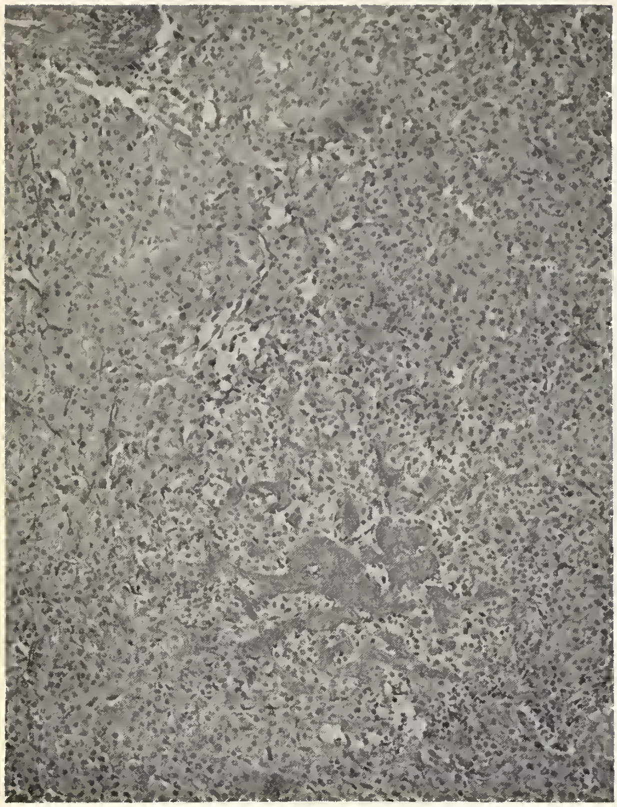

Figure 1

This lower power photomicrograph shows a typical medullary carcinoma with areas of amyloid stroma quite prominent.

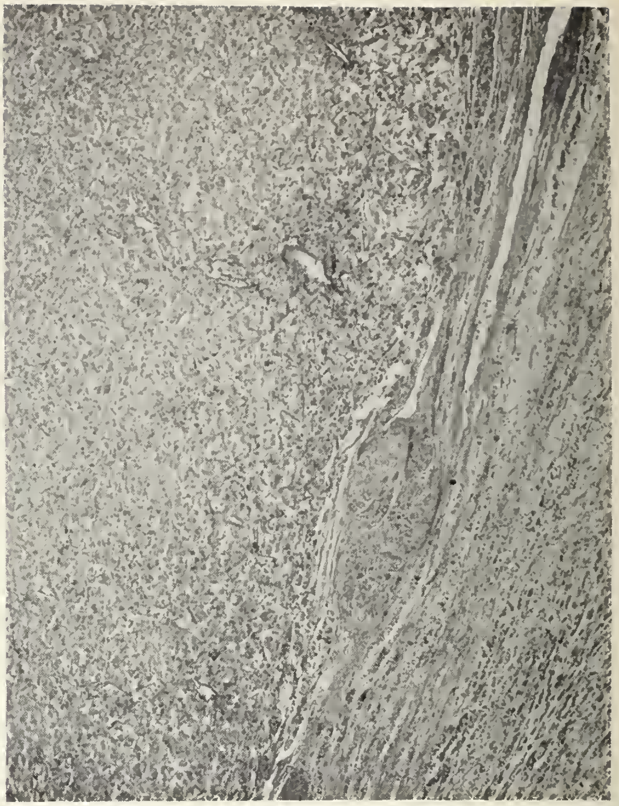

Figure 2

This is a low power view of a pheochromocytoma showing the compressed adrenal tissue adjacent to the medullary tumor.

benzamine permits control over fluctuations of the blood pressure. The effects of catecholamines on the heart rate and rhythm are unaltered because a-blockers have no effect on adrenergic B-receptors. These effects can be controlled by B-blockers such as Pronethalol or Propanolol. A-methyl paratyrosine which blocks the formation of the active catecholamines has been used in this country only in a limited way. The side effects are unpleasant.[10]

Paroxysmal or persistent hypertension caused by excessive secretion of adrenal medullary hormones accounts for potentially fatal complications including left ventricular failure, myocardial infarction, cerebro-vascular accidents and renal insufficiency. However, death is more often preceded by profound shock. Hypotensive episodes in patients with pheochromocytoma usually follow a paroxysm of severe hypertension with a few exceptions reported.[11] The blood volume is greatly diminished due to intensive peripheral vasoconstriction which in turn is due to the action of adrenal medullary hormones on a-receptors.

Vasoconstriction is a prominent feature of shock per se and there is little evidence that its accentuation by drugs is beneficial. Many agents that induce vasodilatation have been used, however, Phenoxybenzamine has been found to be most successful.

Nickerson[12] was the first to use Phenoxybenzamine in the treatment of shock. He treated two patients suffering from advanced hypovolemic shock with fluid replacement and Phenoxybenzamine. Lillehei[13] later reported similar experiences. Since that time several others have used this drug in conjunction with fluid replacement and have had good results. The drug is used in dosages of 1 mg./kg. administered slowly, intravenously. It should be emphasized that any drug therapy in shock is secondary to adequate replacement of intravascular fluid volume with blood or other appropriate fluids. This is particularly important before administration of a blocking agent such as Phenoxybenzamine because inhibition of the vasoconstrictor reflexes makes the circulation highly vulnerable to hypovolemia. The shift of blood

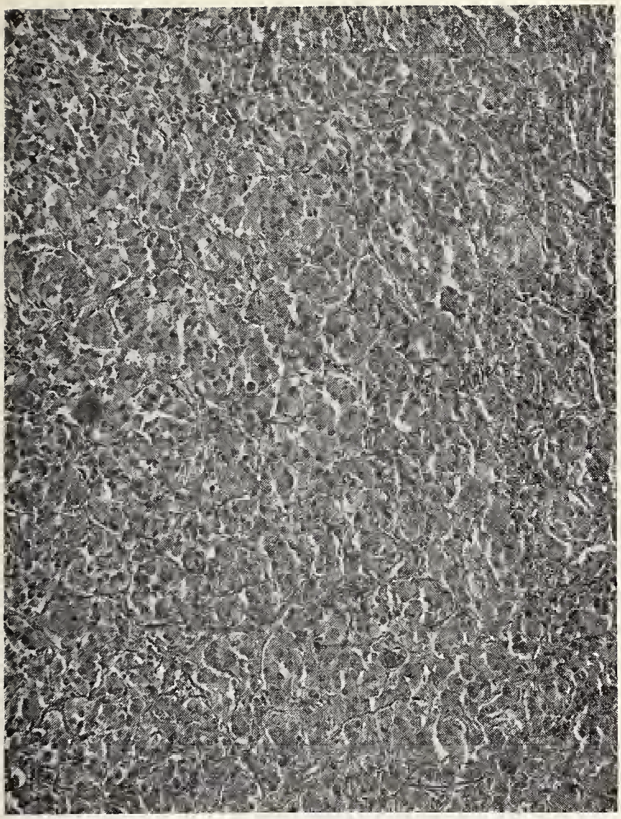

Figure 3

The architecture is typical of a well differentiated benign pheochromocytoma.

from the pulmonary to the systemic vascular bed associated with blockade of sympathetic vasomotor tone allows administration of a large volume of fluid more rapidly than would otherwise be possible, particularly in patients with some myocardial inadequacy.

A plea is made for the use of a-blockers along with fluid replacement in such patients as presented here. If a patient with a history of medullary carcinoma of the thyroid is brought to the emergency room in a state of shock, a trial with Phenoxybenzamine and fluid replacement may be worthwhile. Even if no history is available and the patient has a thyroidectomy scar, the above suggested management may save a life and help in diagnosing a few more pheochromocytomas antemortem.

*Acknowledgment of credit: We would like to thank Dr. Deal T. Aseltine for permission to publish this report on his patient.

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Pre-Operative Diagnosis And Localization Of Parathyroid Gland Dysfunction

P. M. Shimkin, M.D.

M. G. Feldman, M.D.

Introduction

The introduction of multichannel autoanalyzers into community hospitals has uncovered an increasing number of asymptomatic patients with hypercalcemia.[1] Such cases may represent early primary hyperparathyroidism and cause uncertainty in pre-operative diagnosis and difficulty in surgical localization.[2] The recent development of direct and reliable radio-immunoassay systems for the detection of trace quantities of parathyroid hormone (PTH) circulating in the blood,[3] establishes the pre-operative diagnosis of primary hyperparathyroidism with greater accuracy. In conjunction with thyroid venous sampling, PTH assay permits localization of the hyperfunctioning parathyroid tissues. [4,5]

During the past eight months, we have had the opportunity to investigate ten patients with hypercalcemia utilizing PTH assay and thyroid vein catheterization and to correlate these findings at surgery. The interpretation, usefulness and pitfalls of these diagnostic studies constitute the basis for this report.

Material and Method

Chemical screening of 10,848 patients using the multichannel autoanalyzer revealed eleven patients with hypercalcemia, an incidence of 0.1 percent. The normal range of calcium by autoanalyzers is 8.5-10.5 mg/100 ml. Of the eleven patients, six were suspected of having primary hyperparathyroidism and underwent selective catheterization of the thyroid-parathyroid venous bed. In addition, four patients with chronic renal failure and elevated serum calcium were studied.

Using light sedation and local anesthesia, Muller guided catheter system* was inserted into the femoral vein by Seldinger percutaneous technique. Heparinized venous blood samples were obtained under direct visualization with image intensification. Samples of blood were taken from as many of the paired thyroid veins as possible; from both jugular and innominate veins, as well as the superior and inferior vena cava (Fig. 1). Each blood sample was labeled and immediately placed in ice for subsequent plasma separation. The plasma was frozen for storage before PTH analysis. During the catheterization procedure, retrograde thyroid venograms were performed to visualize the vascular anatomy and to attempt to directly demonstrate an adenoma by contrast blush.[6] The normal adult peripheral PTH brachial vein value is from 0.4 to 0.8 nanograms per milliliter (ng/ml).

The catheterization procedure required one to two hours for completion and was performed on an out-patient basis. No significant complications have occurred.

Results

Of the ten cases referred for thyroid venogram and selective catheterization, six patients came to our attention as a result of routine admission multichannel autoanalyzer serum calcium evaluation. An elevated peripheral concentration of PTH was found in nine of ten patients studied. The tenth had a borderline high normal value (0.8 ng/ml). The pre-operative diagnosis of hyperplasia or adenoma was based on the thyroid venous PTH values. Six patients had adenomas confirmed at surgery. Pre-operative localization by thyroid venous sampling was achieved in five patients. Two adenomas were demonstrated as a contrast blush by venography. All four cases of hyperplasia were correctly diagnosed.

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*U.S. Catheter and Instrument Corporation, Glens Falls, New York.

Pre-operative venous PTH gradients of two to fifty fold were observed from the side of the adenoma as compared to the contralateral neck and periphery. In the four patients studied with parathyroid hyperplasia due to chronic renal failure, two to six fold gradients were observed bilaterally as compared with peripheral venous PTH levels.

The following cases are presented to emphasize catheterization and PTH sampling patterns and pitfalls:

Case 1

J. S., a 43-year-old male with a history of renal stones was admitted for evaluation of an elevated serum calcium and depressed serum phosphorous found by routine multichannel blood analysis. On physical examination, a palpable mass was felt on the left side of the neck adjacent to the left thyroid gland. Calcium determinations ranged from 12.8 to 13.0 mg/per ml. The serum phosphorous levels ranged from 2.4 to 3.0 mg/per ml. Skeletal X-ray showed multiple areas of bony demineralization. Selective venography of the parathyroid-thyroid bed demonstrated a blush consistent with a left superior parathyroid adenoma (Fig. 2). Selective venous sampling showed a four-fold PTH gradient from the left inferior thyroid vein and a two-fold PTH gradient from the left superior thyroid vein. The peripheral PTH samples were similar to those obtained from the right superior and inferior thyroid veins (Fig. 3). At surgery, a 20 gm. left superior parathyroid adenoma was removed. A biopsy of a normal left inferior parathyroid gland was obtained, and the two normal right parathyroid glands were identified.

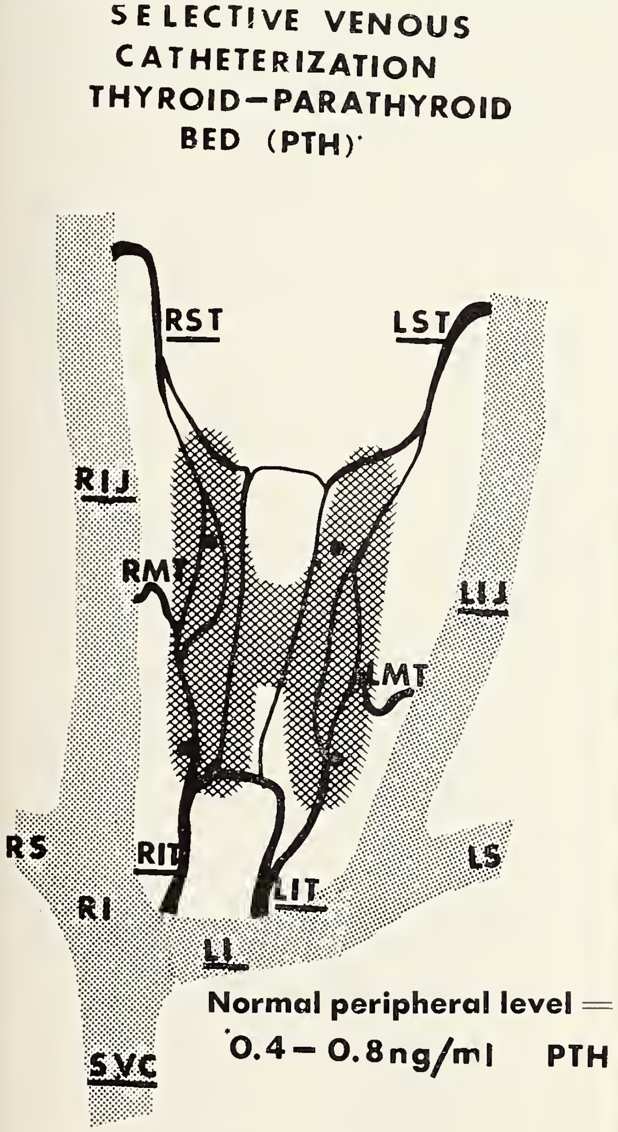

Figure 1

Samples of blood are taken from as many of the paired thyroid veins as possible. Special effort is made to obtain blood from the right internal jugular (RIJ); right superior thyroid (RST); right inferior thyroid (RIT); left superior thyroid (LST); left internal jugular (LIS); left inferior thyroid (LIT) and vena cava or brachial vein.

Comments

Venographic blush in an adenoma occurs because of a flush of the fine vascular stroma of the tumor. Higher injection rates than previously recommended should produce more complete retrograde filling of the small ramifications of the thyroid-parathyroid venous plexus. This may result in a higher incidence of venographic blush. A diagnostic blush was found in two of the six cases of adenomas.

This case illustrates the thyroid venous catheterization PTH gradients characteristic of and con-

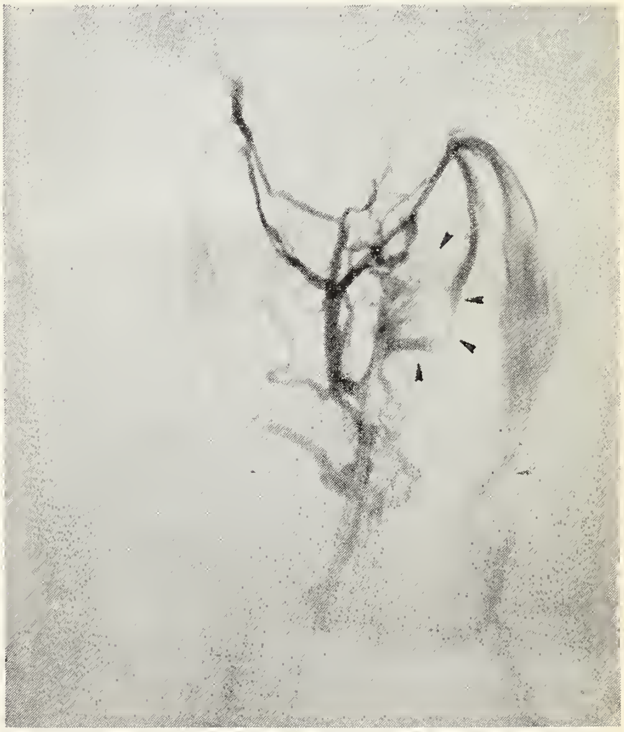

Figure 2

Contract blush indicated by arrows of left superior adenoma. Inferior thyroid venogram.

sistently found with an adenoma. The right inferior and superior thyroid veins had no hormone gradients in respect to the peripheral level because of the suppression of the normal right-sided parathyroid glands by the left-sided adenoma. Contralateral suppression differentiates an adenoma from hyperplasia. The latter causes bilateral thyroid venous gradients. This huge superior gland adenoma produced its largest gradient in the ipsilateral inferior thyroid vein. This is related to the paramount importance of the inferior thyroid vein in the drainage of both superior and inferior parathyroid glands.[5]

Case 2

A.V., a 64-year-old white male with a history of renal colic presented with an acute onset of left flank pain. An intravenous pyelogram revealed several calculi partially obstructing the left ureter. Four serum calciums were all slightly elevated. Normal phosphorus and alkaline phosphatase levels were found. A peripheral PTH value was high normal (0.8 ng/ml), and was clearly abnormal when considered in relation to the mean serum calcium of 10.8 mg/ml. A fifty-fold gradient was obtained from the left inferior thyroid vein. Three right-sided neck samples showed no gradient in respect to the peripheral values (Fig. 4). At surgery, a left superior parathyroid adenoma was removed The remaining three glands were identified and a biopsy of the right inferior gland revealed normal parathyroid tissue.

Comments

This case illustrates catheterization data characteristic of an adenoma in a patient with a borderline chemical diagnosis of primary hyperparathyroidism. The patient had mildly elevated serum calcium, normal serum phosphorous and high normal peripheral PTH. Selective thyroid venous catheterization and PTH sampling provided diagnostic information as well as definitive localization of the adenoma. The absence of gradients in all three contralateral thyroid veins (superior, middle and inferior) is noteworthy.

Case 3

C. C., a 20-year-old essentially asymptomatic, healthy female was under treatment for acne. An elevated serum calcium was discovered on routine blood screening. X-rays revealed a cystic lesion of the left innominate bone. Repeat

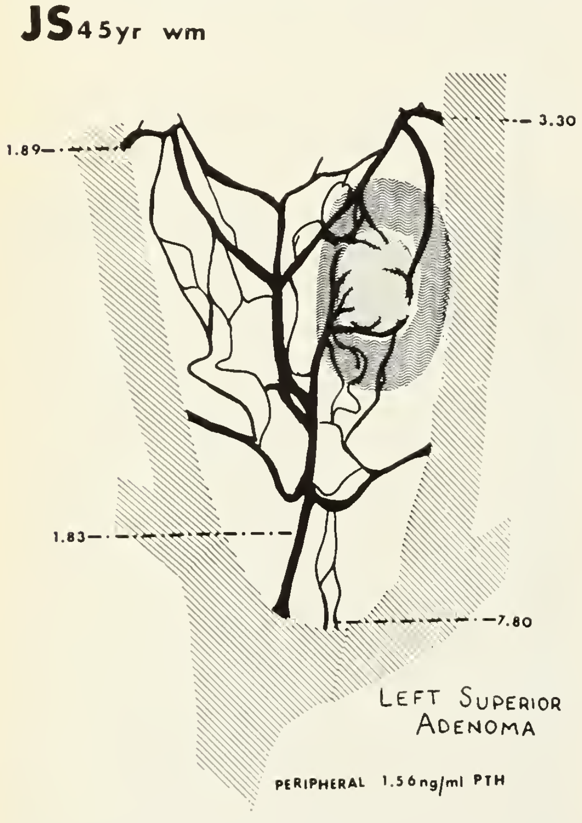

Figure 3

A pre-operative blush is outlined by inner mass of dots. The 20 gm. adenoma is outlined by wavy lined mass. The PTH levels indicate a left superior adenoma. LST = 4x; LIT = 9x. RST, RIT and peripheral levels of PTH are similar.

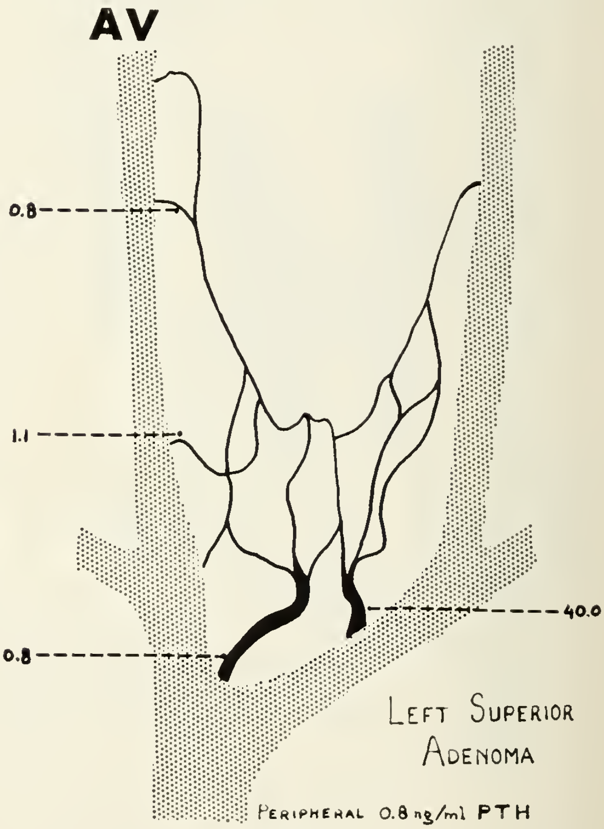

Figure 4

PTH values superimposed on thyroid-parathyroid venogram. LIT = 50x PTH level. RST, RMT, RIT and peripheral vein PTH levels are similar. Patient revealed a left superior parathyroid adenoma at surgery.

serum calcium levels ranged from 13.0 to 14.5 mg/ml. Serum phosphorus and alkaline phosphatase values were consistently normal. The peripheral PTH level was increased 6x above normal (Fig. 5). The venogram revealed a small left inferior thyroid vein. A PTH value of eight times normal was obtained from the right inferior thyroid vein. Neck exploration disclosed a left superior parathyroid adenoma. The remaining three glands were identified and a biopsy of a normal right parathyroid gland was performed. Post-operatively, the serum calcium returned to normal levels. Follow-up examination of the bone cyst revealed resolution with deposition of calcium.

Comments

Exact placement of the sampling catheter by direct visualization during venography under television monitoring is necessary. The PTH levels should be correlated with the venogram before pre-operative conclusions are drawn. The left inferior thyroid vein was small and difficulty was encountered in sampling. The sample, although taken at the mouth of the hypoplastic left inferior vein, appears to be a more representative sample of the left innominate vein since no gradient was obtained.

Case 4

C. D., a 30-year-old juvenile diabetic, was admitted with end stage renal disease. The patient had been on chronic hemodialysis for a year prior to her present admission. Blood chemistries revealed a BUN of 87 mg/100 ml; creatinine 8.4 mg/ml; phosphorus 9.2 mg/ml. Venogram and catheterization studies reveals a bilateral nine-fold increase of PTH levels in the thyroid veins as compared to a two-fold elevated peripheral value (Fig. 6). Exploration of the neck for a total parathyroidectomy was performed. Pathologic examinations of all four glands revealed hyperplasia.

Comments

Bilateral thyroid venous gradients are characteritsic of, and are consistently seen with hyperplasia. These two distinct patterns allowed accurate pre-operative differentiation between hyperplasia and adenoma in all cases in this series.

Discussion

Anatomy

The thyroid-parathyroid venous plexus constitutes an intricate system of channels investing the

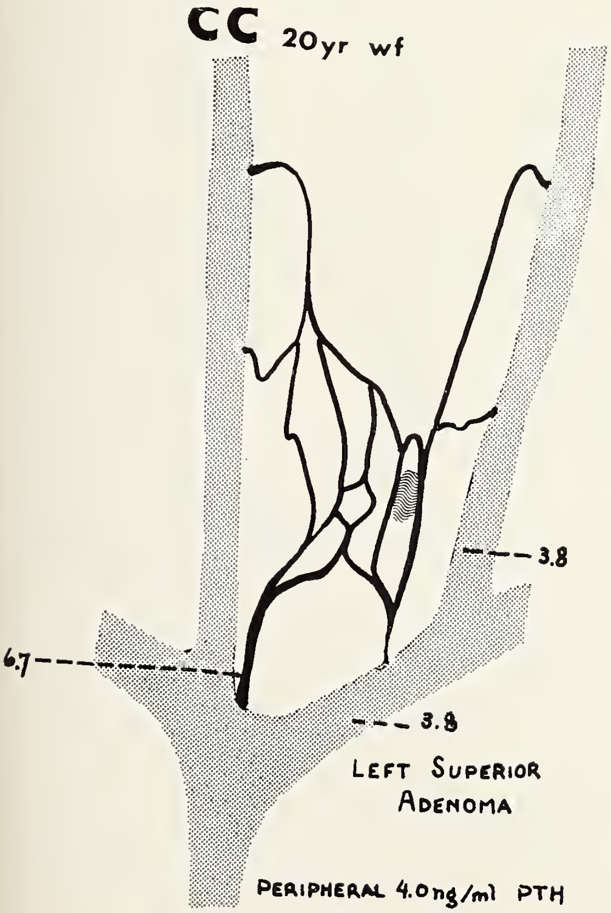

Figure 5
Outline of venogram shows hypoplastic LIT vein which resulted in difficulty in obtaining key blood sample. The adenoma is outlined.

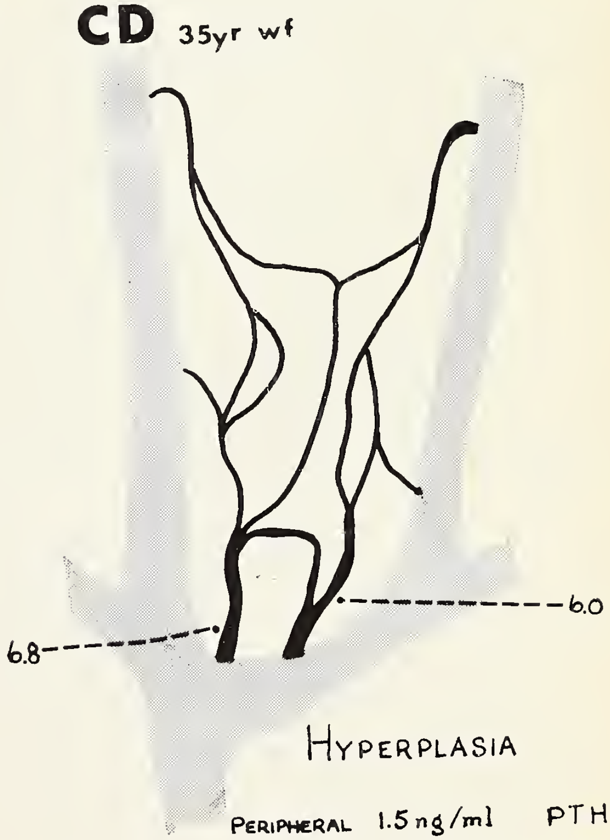

Figure 6
Bilateral thyroid venous gradients characteristic of hyperplasia are noted. LIT and RIT PTH levels are 6x and 7x respectively. Peripheral level is 2x.

thyroid gland transversely and vertically over the anterior triangle of the neck. The drainage of this plexus is by two or three pairs of veins which anastomose freely on the thyroid plexus. The superior thyroid vein joins the internal jugular and/or facial veins. There may or may not be a middle thyroid vein arising at about the mid-portion of the gland and passing directly laterally into the internal jugular vein. The inferior thyroid veins are found on the anterior surface of the thyroid gland although they drain the posterior parts as well. They may drain individually into the respective right and left innominate vein. They may unite to form a single stem and drain into either the right or left innominate vein or on occasion into the thymic vein. The two inferior thyroid veins may interchange with numerous connections to form a plexus thyroideus in front of the trachea. Parathyroid venous drainage occurs mainly via the inferior thyroid vein. The evidence for this assumption is based on higher PTH levels obtained from the inferior thyroid veins in patients with either inferior or superior parathyroid adenomas.[5]

Diagnosing Parathyroid Dysfunction

Numerous diseases are associated with hypercalcemia. Prior to the development of PTH assay, the diagnosis of primary hyperparathyroidism was dependent upon the exclusion of other causes of hypercalcemia and indirect laboratory tests which reflect the effects of excessive PTH secretion. In asymptomatic cases with borderline hypercalcemia, calcium infusion and TRP tests may prove inconclusive.[7] The radio-immunoassy of PTH in serum now makes possible the direct laboratory diagnosis of hyperparathyroidism.[8,9] Potentially futile diagnostic neck exploration appears to be unnecessary and hopefully will become obsolete. Such unsuccessful neck exploration may run as high as 20 percent.[11]

An overlap of normal peripheral PTH value (0.4 to 0.8 ng/ml) in normal and hyperparathyroid patients has been observed.[12] Better separation of the two groups may be achieved by considering the PTH value in relationship to the serum calcium. Hypercalcemia due to causes other than primary hyperparathyroidism will depress the peripheral PTH to undetectable leveles. As a result, a high normal PTH determination in a patient with hypercalcemia is diagnostic of hyperparathyroidism,[13] (Fig. 7).

Localization of Adenoma Pre-operatively

Methods for the pre-operative localization parathyroid tumors have included barium swallow, 75 Selenomethionine scanning, inferior thyroid arteriography and thermography. All of these procedures fail to detect small parathyroid tumors.[14] In addition, thyroid disease may mimic parathyroid tumors. Consequently these procedures are insensitive and, therefore, non-specific. All cases demonstrated in this series had sufficient neck vein PTH elevation to localize the hyperfunctioning parathyroid tissue to the neck region. This finding is an important consideration when the possibility of a paraneoplastic PTH secreting tumor arises.[15] We were able to further localize the site of a parathyroid adenoma in five of six patients and to

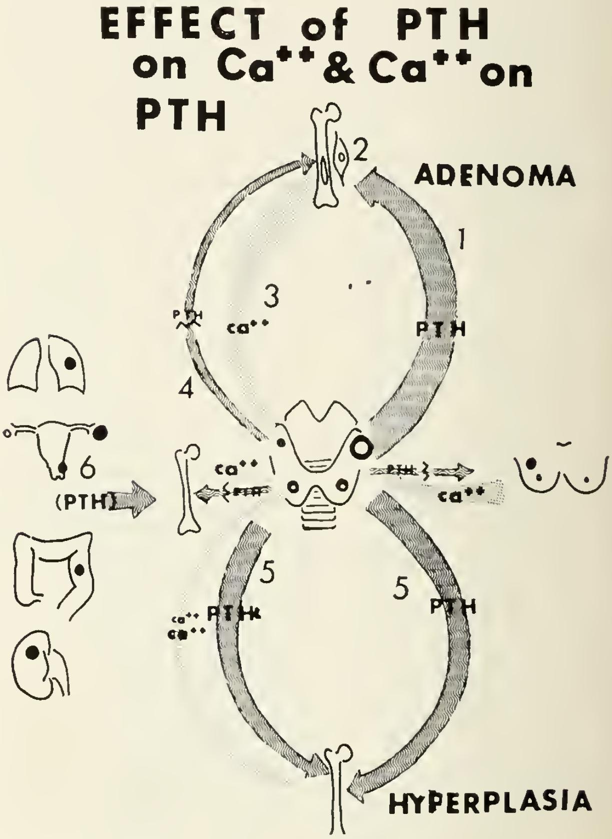

Figure 7

Elevated PTH levels from an hyperparathyroid adenoma (1) stimulates the osteocytes (2) resulting in hypercalcemia (3). The elevated serum calcium depresses the secretion of PTH from contralateral normal parathyroid glands (4).

In parathyroid hyperplasia excessive PTH is secreted from all the parathyroid tissue and gradients are noted from the right and left neck veins.

In hyperplasia of the parathyroid glands due to chronic renal disease the retension of PO_4 results in a fall in Ca^{++} causing all the parathyroid glands to produce an elevation in PTH (5).

In paraneoplastic tumor secreting a PTH like Polypeptide (6) the bone cells are stimulated resulting in hypercalcemia. The elevated calcium results in suppression of PTH from the parathyroid glands.

diagnose hyperplasia in all four patients with chronic renal failure.

Summary

In ten cases of hypercalcemia, six were detected by routine autoanalyzer serum calcium determinations. Radioimmunoassay of peripheral PTH samples from the brachial vein provided a pre-operative diagnosis of hyperparathyroidism in all.

Four cases are presented in detail which illustrate the advantage and pitfalls of selective PTH sampling and retrograde venography of the thyroid venous bed. These tests when coupled together provide a sensitive and specific method for localizing hyperfunctioning parathyroid tissue. Five of six adenomas were correctly localized pre-operatively, and all four cases of hyperplasia were correctly diagnosed. PTH assay and retrograde thyroid venography appears to be a major adjunct to clinical endocrinology in the differential diagnosis of hypercalcemia.

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A Design For A State-Sponsored Therapeutic Program For The Treatment Of Adolescent Drug Dependency

Robert A. Kramer, M.D.

Introduction

The State of Connecticut has a significant number of young adolescents who are drug dependent and for whom there is no program of care. The 16 and under drug dependent child is excluded from existing care systems because of his age. This age differential introduces new considerations in the treatment of drug dependency. Such treatment programs must be coordinated and sustained for long periods of time if they are to succeed.

The following discussion represents a perspective of experience with this patient group and a proposal for the development of an appropriate response.

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Terminology

For the purposes of discussion, the WHO nomenclature is used in this proposal, substituting the term "physical dependency" for "addiction."[1] The general category of drug dependency is subdivided into psychological and physical dependency. Psychological dependency is defined as that situation in which there is uncontrollable, compulsive abuse of any psychoactive drug.

Physical dependency is characterized by two major phenomena, the development of tolerance and of the abstinence syndrome. Tolerance is defined as the decreasing effect of the psychoactive substance experienced with repeated use with the result that the original effect can be achieved only by increasing the dose.

The abstinence syndrome essentially describes the altered physiological state in which the absence of the drug in the body produces physical illness. Examples of this include the increase in lacrimination, abdominal cramps, tremor and myalgia of heroin withdrawal.

Although psychological dependency can be clearly present without physical dependency, physical dependency is not seen without psychological dependency.

The fear of the abstinence syndrome generates predictable patterns of behavior and is of primary concern in the development of treatment programs. However, the management of psychological dependency remains the most significant therapeutic challenge of the drug dependency syndrome.

The terms "preaddictive" and "experimenter" which are popularly applied to the young adolescent's drug experience are deliberately not used in this discussion because they imply the absence of a problem rather than its presence.

Current Experience

Until February of 1970, there were no facilities in the State of Connecticut for the treatment of adolescent drug dependency in the age group 16 and under. The existing facilities including the Department of Mental Health's Blue Hills Hospital service excluded patients under 16. The therapeutic communities which have proved to be so effective in the treatment of adult drug dependency both publicly and privately sponsored also excluded patients under 16. The state hospitals of Connecticut had no programs designed for the problems of drug dependency and in at least one case if an adolescent was admitted to the psychiatric hospital and diagnosed as being drug dependent, he was then placed with the adult drug dependency service rather than with his own age group. From February 1, 1970 through June of 1971, the University of Connecticut Hospital, McCook Division, conducted a pilot study for the treatment of adolescent drug dependency for children ages 16 and under. The children seen in this program ranged in age from 11-16; a total of 75 being seen over this period of time. There were 43 boys and 32 girls. The treatment design consisted of withdrawing the children from the community and admitting to an inpatient service at University Hospital. Where indicated, pharmacological help was provided in the form of chlorpromazine or methadone to assist in detoxification of those who were heroin dependent. Withdrawal from the hallucinogens, barbiturates, or stimulants was carried out with supportive care on the part of the staff or other patients. The stay in the hospital was for a period of 30 days during which time the patient was offered occupational therapy, group psychotherapy, individual counseling, as well as a complete physical and psychological evaluation. A detailed description of the therapeutic design is reported separately.[2]

The Adolescent Drug Dependency Inpatient Program (ADDIP) provided a large body of data about this phenomenon in the under 16 year old. In addition, it illustrated the inadequacies of the short-term program in bringing about change in the behavioral pattern of these youngsters. The following observations were made from the experience and are the basis for the proposal submitted herein:

1. The average duration of drug involvement whether it was hallucinogen, barbiturate, or narcotic was on the order of 1½-2 years before the patient sought help. It should be noted that all of the youngsters seen in this program were voluntarily admitted even though they might have been referred by a probation officer or school counselor.
2. There were distinct differences in motivation between the youngsters who were primarily heroin dependent and those who were primarily hallucinogen/stimulant dependent for seeking help. The youngsters who were primarily heroin dependent consistently expressed no distaste or unhappiness with their heroin dependency. They were primarily seeking help because of their anxiety or fear over the life style required in order to get their heroin or the fear of the consequences of their

entrance into the crime cycle required to satisfy their heroin needs.

In contrast the hallucinogen/stimulant dependent youngsters generally sought help because they had become frightened of the change in their personalities and deterioration in their ability to function in their own community. In their own words, the common phrase was, "My mind is getting messed up." It was extremely unusual to see a child who was hallucinogen dependent presenting with this complaint without an experience of at least a year and a half of weekly hallucinogen ingestion.

3. There were social-cultural differences in the drugs used. The Black and Puerto Rican children of the inner-city were more characteristically heroin dependent with a small amount of marijuana experience and generally little interest in the hallucinogens. There was an occasional use of barbituates and stimulants. On the other hand, suburban children from both lower and upper socioeconomic groups tended to use unpredictable mixtures of drugs including hallucinogens, stimulants, sedatives, inhalants, and heroin. They were also more likely to mix their drugs without consideration of their potentiating effect. This latter behavioral pattern appears to be a distinct characteristic of the young adolescent as compared to the adult who is drug dependent.
4. Children who are predominantly heroin dependent use the same techniques for obtaining their drugs as adults who are heroin dependent. These were stealing, prostitution, and the selling of the drug itself. The youngest prostitute in the program was 12, and the youngest dealer in drugs was 13 years of age.
5. The average dollar requirements of the heroin dependent youngsters in the program was on the order of $20 a day.
6. Detoxification was the least difficult part of the treatment program. The abstinence syndrome seldom lasted more than 48 hours in any of the heroin dependent children admitted to the program. The primary problem was the intense psychological dependency which was apparent even in patients who denied "a habit." The characteristic behavior of the heroin dependent youngster was to run away to seek heroin after successfully being detoxified.
7. The children who were primarily hallucinogen and stimulant dependent who expressed the anxiety about their own personality changes were the most responsive to the group therapy process and the occupational therapy program.
8. The most inadequate feature of the program was the follow-up after discharge. No facilities were available in the form of halfway houses, long term residential treatment programs, residential schools, or day programs for this age group. As such, all of the youngsters were returned to the community with the rare exception of that youngster who was able to get into a residential school through extensive advocacy on the part of his parents or the staff. Contact was sustained with them through a weekly group meeting at the University Hospital and for many this was effective.
9. The follow-up results on the children in the program reveal that the inner-city children who had to return to their homes had the poorest results. Essentially all of the heroin dependent youngsters from the Hartford inner-city have returned to heroin after they have returned to their home environment no matter how committed they appeared to be in the treatment program while in the hospital. Where it was possible to discuss this experience with them, there was generally an attitude of anger and recrimination against the program for sending them back on to the streets. Those few heroin dependent patients who were placed in long term residential services were the only ones who remained drug free beyond six months.

Proposal

In view of this experience and in consideration of attempts at the treatment of drug dependency in other communities, the following proposal is made for the creation of a state-wide adolescent drug dependency program. It is suggested that this program be the responsibility of the Associate Commissioner for Children and Adolescent Services of the Department of Mental Health and that there be created a five step program as follows:

1. That *induction* and *detoxification* centers be established in the major cities of the state. The model of the ADDIP Program at the University of Connecticut Hospital can be developed to provide a short term opportu-

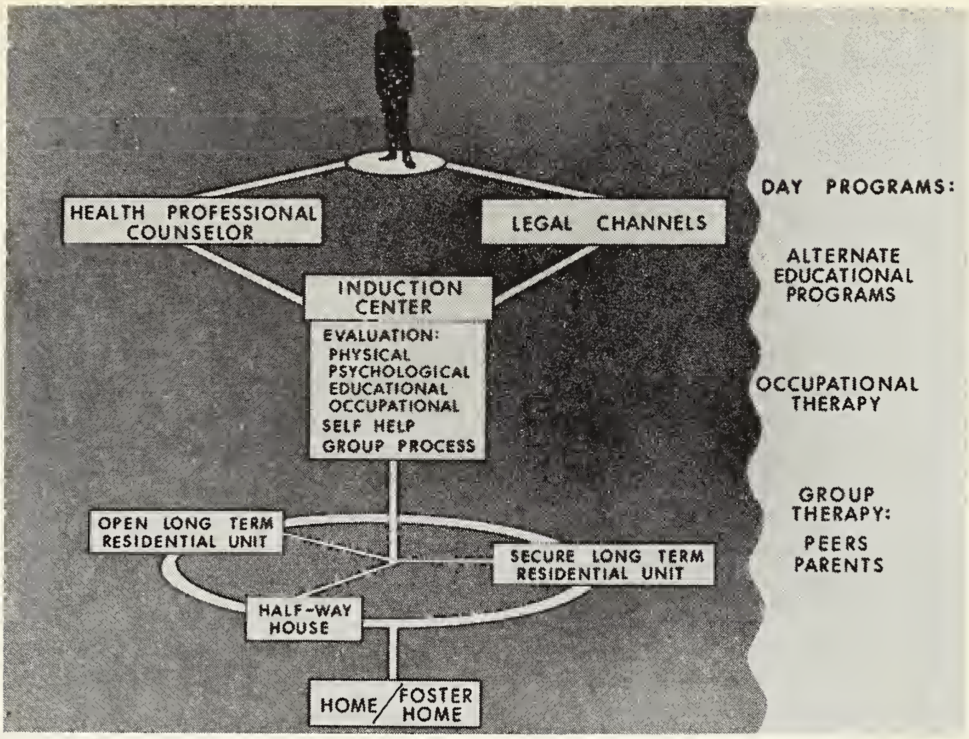
nity for withdrawal from drug dependency and from the community followed by "an induction" program. The induction program would introduce the patient to the concept of self-help, the group therapy process, occupational therapy, a complete physical and psychological evaluation and involve the patient in planning for his own future. This can be carried out within the hospital facilities but it does require a separate area from the acute medical service of the hospital. Staffing patterns for this should include the medical staff, counselors, social workers, occupational therapists, clinical psychologist and where possible adolescents who have completed a treatment program who can function as role models in the peer group interaction of the therapeutic community. All members of the staff should be trained specifically in the area of adolescent therapy.

2. From the induction service, the patient should have four possible options depending on the status of his drug dependency
   a. He could return *home* and continue supportive care through an outpatient group program or day program. A day program for those youngsters living at home in the form of group meetings, occupational therapy, and personal counseling should be established in each community. This may be located at either the induction center or the halfway houses or independently as indicated by the needs of the respective comnities.
   b. He could enter a *halfway house* within the community to which he expects to return where he would have a moderately protected environment and yet could interact within his own community. The halfway houses would represent regionally located facilities providing a supportive home environment for the youngster whose own home is inadequate to meet his needs but who has enough personal self-control to attend school or work within the community. The staffing of such a halfway house would include house parents, social worker, medical consultation, and the participation of experienced counselors in adolescent drug dependency. The group process and the therapeutic community modalities would be applicable in the halfway house. The stay in the halfway house would be on the order of 6 months to 2 years depending on the needs of the individual child.
   c. He could be referred to an *open long term residential program,* as for example, a residential school where he would be provided psychological support services as well as education, recreation therapy, and the models of a therapeutic community wherein his goals and concerns about himself can be explored and directed. Such a facility would be designed for the strongly motivated youngster whose home environment is so noxious that any chance for his rehabilitation without this protection would result in his returning to his drug dependency.
   d. Finally, there would be a *secure long term residential program* for those children who have expressed the desire for help in eliminating the drug dependency but who were totally unable to resist the enormous craving or psychological dependency and have demonstrated their lack on control through their recidivism. This facility would also be available for those youngsters who in the judgment of the juvenile court or other professional agencies need to be removed from their environment for their own protection. Such a facility should be developed in conjunction with an established residential treatment center and may be a single central facility for the entire state. A cottage system, again using the techniques of the therapeutic community including group therapy, creative work experience, educational alternatives and/or vocational training and daily self-care responsibilities are essential in the design of such a program.

In all cases, admission to the services described would be through the induction service. The stay in the induction program could be flexible depending on the readiness of the individual child for a transfer to the next level of care.

The concept of graduation to different levels of care as the patient progresses in his self-understanding and control of his impulses and craving for his drug is vital to his personal growth in the treatment program.

Implicit in this design is the need to be able to move an adolescent from one level to another as indicated by his progress in care. The diagram in Table 1 illustrates the proposed referral and pat-



tern of graduation through treatment. In parallel to all of these programs, there should be available group meetings, either sponsored at the day programs or in the other centers, for the parents of the children. Wherever they can be successfully involved in exploring their own feelings and understandings of their child's drug dependency, it should be accomplished.

Another very important characteristic of this population must be recognized. A drug dependent 13 year old will be a dependent minor for the next 3-5 years. As such, any program that purports to offer him the opportunity to change his life style on any permanent basis must continue to be involved with him for at least that length of time.

Summary

It has been clearly established that there is a significant population of adolescents ranging in age from 11-16 who have achieved drug dependency either physical and/or psychological in the State of Connecticut. The failure to develop treatment programs for this age group in Connecticut presents a challenge that must be met. Private funding will not be sufficient to support such programs and therefore federal and state funding should be sought through the Department of Mental Health for the creation of a state-wide system for the treatment of adolescent drug dependency.

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Connecticut's Requirement For Reporting Gonorrhea; Time For A Change

John B. Atwater, M.D., Dr.P.H.

The rapidly rising incidence of gonorrhea in this country reflects, among other things, a major failure of the existing venereal disease control programs and techniques. These procedures, which in the past have been reasonably successful in bringing syphilis under control, are concerned largely with the exhaustive tracing of all contacts to infectious patients and begin with the necessity for prompt and complete reporting of infectious patients by name. Since this procedure has proven ineffective in regard to gonorrhea, it is appropriate to re-examine the Connecticut law requiring the reporting of gonorrhea and to consider how it might be revised to make possible more effective control measures.

The present Connecticut Public Health Code requires that, "Every physician or professional attendant having under his care or observation a person affected with or apparently affected with a reportable disease shall report, to the local Director of Health or other local health authority within whose jurisdiction such patient is, the full name, age, address, and occupation of the patient, with the name of the disease. . . . Such report shall be made . . . within twelve hours after his recognition of the disease."[1] With respect to gonorrhea, this requirement not only fails to achieve its intended objective, the systematic gathering of cases for epidemiologic control and follow-up, but in its present form it actually inhibits reporting by private physicians, with the result that reliable data on the real incidence and epidemiologic characteristics of the problem cannot be obtained.

That the venereal diseases, particularly gonorrhea, are underreported is a well-documented fact. Nationally, there were 624,371 cases of gonorrhea reported in fiscal year 1971, and the Public Health Service has estimated the actual incidence of gonorrhea for this same period at "well over two million cases."[2] Bruce P. Webster, M.D., Chairman of the National Commission on Venereal Disease and President of the American Social Health Association, in a brief discussion of the factors contributing to the rise in venereal disease, states: "Important among these is the fact that 80 percent of the cases of venereal disease in this country were treated by private practicing physicians and that of these, they reported only approximately 10 percent. It is thus apparent that the practicing physician is a key factor in the control of these diseases."[3] In spite of general agreement that the private physician is indeed the "key factor," there has been little progress made in achieving a higher level of case reporting.

Recent experience of the New Haven Health Department in its efforts to control the present epidemic of venereal disease indicates a way around this impasse with respect to gonorrhea which appears to increase the effectiveness of epidemiological control and follow-up, while leaving intact the confidential relationship between physician and patient.

Due to a lack of adequate personnel to conduct and follow-up contact interviews with the rapidly rising number of gonorrhea patients being seen in the Preventive Medicine Clinic, it became necessary to abandon the traditional contact-tracing procedure. Instead, beginning in early 1971, the clinic personnel now make no attempt to require patients to reveal the identities of their sexual contacts, but rather focus on the patient's responsibility to personally see that all his contacts are made aware of the problem and the need to come to the clinic for diagnosis and treatment. The interview opportunity is used, at the same time, to provide the patient with practical education and advice on the ways to prevent reinfection in the event of future re-exposure to the same or other sex partners. The results have been most encouraging; not only has clinic attendance risen sharply since this change in interviewing procedure was adopted, as a result of both improved patient acceptability and in-

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creased contact referral, but of even greater significance has been the drop in the male/female ratio from 3.7/1 to 1.6/1, indicating greater success in reaching asymptomatic females who constitute the principal reservoir of untreated infections. This evidence strongly suggests that the traditional contact-tracing technique, with its reliance on case reporting by name and the specific identification of contacts, may not only be impractical as an effective epidemiological approach because of the numbers involved, but also unnecessary and a deterrent to many patients seeking prompt medical attention.

It is proposed, therefore, that the State Statute and Public Health Code be amended so that private physicians, hospitals and local public health clinics no longer be required to report the *names* of their gonorrhea patients. In addition to the total number of patients treated, physicians would still be required to report the age, sex, race, and town of residence of each patient which would provide useful information for health professionals and researchers for epidemiologic and planning purposes.

It should be emphasized that this suggested revision applies only to the reporting of gonorrhea, not syphilis. There are several significant differences between the two diseases which necessitate different methodologies for control. In contrast to gonorrhea, the incidence of syphilis is much lower, and the consequences of delay in treatment are more serious. Further, the incubation period for syphilis is significantly longer than for gonorrhea which allows time for effective contact investigation. Private practitioners, moreover, detect and treat early syphilis relatively infrequently and, because of its seriousness, take a more conscientious attitude towards it. The combined result of these factors is that the reporting of syphilis cases by physicians although still incomplete, is more effective. The distinction, in other words, is that, while infectious syphilis may be "contained" by present case contact-tracing methods, this is not true for gonorrhea, thus new methods are needed for its control.

A closer look at the major reasons why many private physicians fail to comply with the present reporting law yields additional evidence that supports the need for the proposed revision. A study of physicians' attitudes towards reporting venereal diseases by Cleere, Dougherty, Fiumara, et al., in 1967 revealed two essential problems: (1) doctors do not fully trust the confidential nature of health department records and personnel; and (2) doctors lack complete understanding of reporting as the basis of contact-tracing.[4] Another more recent survey in the District of Columbia reached closely related conclusions, (1) Some physicians would report gonorrhea if complete epidemiologic services were provided by the public health department. (2) The physicians' greatest concern is confidentiality and the "physician-patient" relationship. (3) Most physicians attempt to do their own epidemiology.[5] It becomes immediately apparent that there are two crucial factors that perpetuate the incomplete reporting of gonorrhea by many physicians. These are the over-riding concern for strict confidentiality between physician and patient, and the recognition by the practicing physician that the information submitted will not always be productively used for epidemiological follow-up. Even if this underlying skepticism concerning the efficacy of present epidemological procedures could be dispelled, it is still doubtful that most physicians would routinely divulge the names of their patients, because of their traditional concern for confidentiality.

Based on experience in talking with a great many clinic and private practice VD patients, it would appear that the proposed revision would also have an influence on reducing the delay of many individuals in seeking medical attention when they suspect they have a venereal disease. One of the major reasons for this delay is the high level of anxiety concerning the possibility that others—wives, husbands, parents, school personnel, employers—will find out. Not so surprisingly, many patients seem as threatened by the potential consequences of discovery, as by concern over their own health or that of their contacts. If the public were assured that no report of gonorrhea infections by name was required, many people would seek treatment sooner from both private and public sources thereby reducing the number of contacts that would, in turn, be exposed and infected. The assurance of confidentiality for all patients would yield far greater immediate and long-term benefits to the community than the maintenance of a law which, rather than facilitating the effort to control gonorrhea, actually impedes it.

There is yet another point to consider: the increased cooperation by private physicians achieved by this revision would provide public health officials with a useful picture of which resources individuals are utilizing for treatment. With this information, local health departments could effectively direct their efforts towards those physicians who were treating the largest number of cases and assist these physicians in convincing their patients to assume responsibility for getting all contacts examined. Other supportive services could be provided such as the distribution of educational material and the provision of special arrangements for the transportation of cultures to laboratories for analysis. Thus the most important element for an effective control program—a cooperative approach between public health and private physicians—would be established.

Earle Lippincott, Executive Director of the American Social Health Association, recently predicted that ". . . at recent rates of increase the hazardous reservoir of venereal disease infections present in over 2,500,000 citizens of this country annually will more than double in its massive extent within each coming decade unless checked."[6] If the effort to meet this challenge is to be successful, imaginative new approaches will be needed and available resources will have to be utilized in more creative ways. It is quite clear that the old approaches have not worked and must be either modified or discarded. The revision of the present unproductive Connecticut reporting law would be an appropriate place to start.

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Quest For A Spark For United Forward Action

Ira Vaughan Hiscock, M.P.H., Sc.D.

Who can find the proper stones to rub together at the right time in order to create the spark for a more concerted, dynamic, forward movement in Connecticut's Community Health Agencies? Or, are we moving as rapidly and as wisely as can be desired by all concerned?

Here in New England was conducted a study and formulated a comprehensive plan in 1850 with proposals, still applicable, to which may be applied, with flexibility, some power generating findings from long tested experience. Furthermore, the Leader, Lemuel Shattuck, was mindful of an Indian Prayer:

> Grant that I may not criticize my Neighbor
> Until I have walked a mile in his Moccasins.

Perhaps "we don't know what we want, but we knew we're not getting it," proclaimed an executive in a cartoon. Sometimes, in despair, have we thought of accomplishments, progress, potentials, and colors of the rainbow for symbols of Hope, while reflecting on disgraceful records of infant mortality, syphilis, gonorrhea, accidents, inroads of drugs and cigarettes; population—"the U.S. Problem, the World Crisis"? Is May Day still child health day? Is World Health Day-Heart Day producing more action? What are chances of survival in polluted environment? What are gaps in health care? What are new policies? Where are more secure bridges for communication interpretation, and understanding?

We hear encouraging reviews of purposes and development of CRMP and CHP, with statewide participation of hundreds of cooperating people working together. Constructive comments are made and "challenges" offered on the roles and collaboration of the half-century-old Connecticut

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IRA VAUGHAN HISCOCK, Emeritus Professor of Public Health, Yale University, Connecticut State Conference of Health and Related Organizations, 3 May, 1972, New Haven Motor Inn.

Public Health Association and of the youthful Connecticut Health League. Anxious and stimulating reactions are given by wise "consumers" and "providers" who have "mud on their shoes." In our so-called wealthy Nutmeg State, I am aware of over 50 years of progress, sometimes dimly observed, in a community of 3,000,000 people—an area notorious for local autonomy, "pride and prejudice.." We live in a glorious country and in a wonderfully beautiful state, with a motto to cause us to think ahead—Qui Transtulit Sustinet, or He who Transplants Must Sustain. With the tremendous lure of this spectacular land, with superior cultural and educational resources, vacation spots, lovely gardens and trails, trout streams, golf courses, lake-sides, swimming and sailing attractions and shore resorts, our people have unlimited opportunities and responsibilities.

Alert and wise men were those men of our neighboring state of Massachusetts who recommended in *1850,* in the great Shattuck Report, for example, that:

1. An association be formed in every city and town in the state, for the purpose of collecting and diffusing information relating to public and personal health. They wrote that sanitary improvement "only requires to be generally understood to be universally regarded as the great subject of the age. Public opinion needs to be educated, and in no way can it be done more effectually than *by associated effort.*"
2. The authority now vested in justices of the peace, relating to insane and idiotic persons, not arrested or indicted for crime, be transferred to the local Boards of Health.
3. Tenements for better accommodation of the poor be erected in cities and villages.
4. Persons be specifically educated in sanitary science as preventive advisers as well as curative advisers.
5. The advice of the physician should be sought and paid for while in health, to keep the patient well, "as one of the most useful reforms which could be introduced into the present society."

Seven (7) reasons for approving the comprehensive plan with numerous recommendations were stimulating, too, as we think about next steps in 1972 and the years ahead:

1. Because it is a *practical* plan
2. Because it is a *useful* measure
3. Because it is an *economical* measure
4. Because it is a *philanthropic and charitable* measure
5. Because it is a *moral* measure
6. Because the progress of the age *demands* it
7. Because it involves an important duty

The causes of disease and handicap are more than physical and biological. A new philosophy and science have led to new concepts and heavy tasks emerging as a result of a long evolutionary process. Economic and social conditions play an important part in policy and programs.

Even though the complexities of care for the chronically ill, and of lonesome elderly people have been pressing for years, however, are we proud of services available and accessible? Have we really flexible criteria for measurement of needs and of results? Are our governmentally supported hospitals for mental illness and handicaps and tuberculosis and respiratory diseases operating in tune with local privately supported general hospitals and vice versa, for both ambulatory and home care and also for patients who occupy increasingly expensive beds with a petunia in the window and countless attendants? Have we more than made a beginning in eliminating architectural barriers in churches, clinics, hospitals, libraries, museums, and elsewhere? Who provides transportation for whom for what purposes at what cost? How many and where are the undiscovered cases of diabetes, approaching blindness, incapacity, family crisis, and neglect? Who follows up on broken appointments and on "home bound possible" cases? Money is only one answer pertaining to priorities in change.

Yet, we can be encouraged by this new stimulating quotation on the cover of the 1971 annual report of the New Haven Foundation which distributed a million and a quarter dollars in the local New Haven region of Connecticut in 1971.

"Life would be poorer and meaner if there were no philanthropic institutions standing between the life of private organized acquisitiveness and the life of public organized administration. If private life is to have public purpose in an increasingly complicated impersonal society, we need more, not fewer outlets for private charitable initiative."

Great has been the progress along with the mounting opportunities and responsibilities of comprehensive health planning and of regional medical program developments. Numerous members of the Connecticut Public Health Association (a state arm of the great American Public Health

Association), and of the Connecticut Health League (a child of the National Health Council), have been working on Task Forces and committees, as have leaders of the Connecticut State Medical Society and of the Connecticut Hospital Association. Numerous grants are from companies in our Insurance State, and from prominent bankers, who are interested in the betterment of our people in many ways. But how long can we expect CPHA and CHL to "carry on" and be helpful and influential without a skilled operator "to keep store" and assist in "delivering the goods?" Convenient headquarters, with an able executive director and a telephone trained secretary and having wise advisory, guidance, are essential. Marriage is unnecessary in 1972 as a stipulation for living together. The time, the community agency jobs beyond the goals of CRMP and of CHP and the official agencies, are too important to permit of any waste of effort or confusing duplication or cumbersome misunderstood action. Can CRMP and Insurance companies help with a small financial boost for 3 years while these two primary organizations become self-supporting on a vitally pressing "lift-off?"

As in the past, we need urgently: (a) a forum for intimate, deliberate discussion of problems of concern for health and betterment of human living, including giving thought and proper action to radical, reasonable, and important legislation; (b) a medium for continuing analysis of community needs beyond those provided only in "academic halls," and for stimulating ways of meeting them that fit the various situations closely; (c) a means for avoiding unnecessary overlapping and friction, and machinery through which citizen participation can be made more effective, and sounder community programs can be formulated harmoniously, evaluated and kept up to date, in full recognition of the inter-relationship of the parts of our social structure and of the fact that the whole is greater than the sum of its parts.

How can the great benefits be better organized, with practical correlation, coordination, and meshing (not necessarily merging), and how can appraisal and evaluation be made in such fashion as to enable every citizen to be involved appropriately and to realize his birthright of health, longevity and happiness?

Among the assets are more than seven agencies and special groups, as illustrated by: the Tuberculosis and Respiratory Disease Association; the Cancer Society; the Heart Association; the American Red Cross; the Associations for Mental Health and Mental Retardation; the Crippled Children and Adults Association; the Federation of Planned Parenthood; the Society for the Prevention of Blindness; the Diabetes Association; and the many church groups. These were operating before C. E. A. Winslow gave us the 1920 definition of Public Health,* over seven influential other state voluntary organizations such as: The Connecticut State Dental, Veterinary, and Medical Associations, the State Bar, and the League of Women Voters, the Education and Social Work Groups, the Congress of Parents and Teachers, the Connecticut Public Health Association, and later perhaps, the lively Connecticut Hospital Association, the Connecticut Health League, and the Connecticut Hospital Planning Council with imagination and ingenuity, besides branches of the National Retired Persons and Retired Teachers Associations.

Since 1920, furthermore, there have been organized to help meet pressing needs and carefully conceived objectives, more than 107 agencies and groups to be alive to meeting responsibilities for better health care, such as the following seven: Blue Cross, Connecticut Medical Service, Home Care and Homemakers' Service, Connecticut Regional Medical Program, Association of State Community Health Agencies (formerly Board Members Organization), Comprehensive Health Planning, and CORA (of Yale-New Haven Medical Center)—a Council illustrating a medical center effort to cope with inside and outside complexities of coordination, composed of representatives of hospital, medical school, practicing physician and student members. These are, in a way, supportive and *complementary* to the basic local state and national governmental organizations.

As another illustration of evolving attitudes, interests, and constructive resources, full of promise, are the rapidly growing programs in numerous community hospitals, involving both commendable "outreach" and educational and service "input," coupled with growth and impact constructively of ambulatory services, research and evaluation achievements. *Too few are aware of or recognize their significance.* At least seven of these community hospitals could probably serve as headquarters for local and district health departments. More dynamic community health centers are essential with the medical administrator also as a member of the hospital staff than the present, locally used, often dingy, crowded, inaccessible, unattractive, neglected, so-called health department offices. Too few health department headquarters resemble those of Norwalk, Hartford, Meriden, Hamden, and New Haven. Among the hospitals for this wider development can be mentioned with great satisfaction: New Britain, Griffin, Bristol, Danbury, Middlesex, Day Kimball, and Windham, with possibilities worth exploring also in Bridgeport and Waterbury.

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*Public Health is the science and art of preventing disease, prolonging life, and promoting physical and mental health and efficiency, through organized community efforts for sanitation of the environment, the control of community infections, the education of the individual in principles of personal hygiene, the organization of medical and nursing service for the early diagnosis and preventive treatment of disease, and the development of the social machinery which will ensure to every individual in the community a standard of living adequate for the maintenance of health.

**"Outreach"—Webster's Collegiate Dictionary: "To extend or spread, to influence or express, as, to reach one with kindness; to reach beyond, process of reaching or stretching out."

Incidentally may be mentioned the fact that the Bridgeport, Hartford and Stamford Hospitals have unusually attractive and effective medical and nursing libraries.

The technology is available to resolve so many problems. But we require intelligent, concerned, application of this technology on local and regional levels that will help to reduce the overwhelming volumes of tasks and to conserve and utilize better our diminishing natural resources and the available prepared and tempermentally equipped manpower. Most of us, doubtless, with a sense of Connecticut's history, have also inherited and acquired the "pull" and "push" which our predecessors felt, and wish to share voluntarily the wonders of attainment possible, *beginning on the first day of the rest of our lives.*

Will the new Department of Human Services, authorized by the General Assembly, help?

How fully are current programs achieving their aims? If not, why not? Are the aims reasonable? What about the overall evaluation of programs and of services? How does one appraise and evaluate? Can a standard be developed and utilized? Which criteria are most useful and most crucial in determining success? For what? Where? When? Why? How should success be defined, by whom and under what circumstances? Who should be informed of results, and when? Who should act in accordance with observations?

Let us unite in Looking Ahead, and in taking Next Steps. We may feel like paraphrasing Lemuel Shatuck of 1850 adapted to 1972 with our "only motive—of calling public attention to the causes of disease and of leading to the adoption of wise measures for their removal." Such a motive, with attitudes in tune with appropriate forward movements would bring quicker and more forcefully the realization of the dream of William James: "Simply to live, move and breathe should be a delight." Pathways are being cleared and broadened for our next steps, while some barriers have to be lowered and two-way bridges prepared. Patience and ably conceived action plans, with Persistence, Pay for People's Plodding Prayerfully Toward "Peace and Plenty" for all.

In today's "Good Morning," by the Journal-Courier, Omar Ibu-Al Halif is quoted: "Four things come not back: the spoken word, the sped arrow, time past, neglected opportunity."

DR. IRA S. GOLDENBERG RECEIVES AMERICAN CANCER AWARD

Two decades of outstanding cancer related research and service were recognized when the Connecticut Division of the American Cancer Society presented to Ira S. Goldenberg, M.D. of Orange its 1972 Bronze Medal Award.

The award, the highest the national society can bestow on Division volunteers, was conferred at the Division's annual meeting, Oct. 19 at the Algonquin Club, Bridgeport. Milton Cooper, M.D., of Bridgeport, Division president, made the presentation.

Dr. Goldenberg is a professor of Clinical Surgery at Yale University. A native of Bridgeport, he graduated with honors from the University of Michigan and holds his medical degree from Boston University, where he was a service scholar in cancer research. He has been on the faculty of the Yale School of Medicine since 1957 and was named a full professor of surgery in 1968, a post he now holds.

Dr. Goldenberg's cancer oriented activities in Connecticut have included membership on the board of directors of the Conn. Division, A.C.S. and the Cancer Coordinating Committee of the Connecticut State Medical Society. For the past two years he has served as medical advisor to the "Reach to Recovery" program of the Division, a rehabilitation program for patients who have had surgery for the treatment of breast cancer.

A consultant to the National Cancer Institute, serving on the Breast Cancer Task Force, Dr. Goldenberg is also a member of the American Association for Cancer Research, the American Federation for Clinical Research and has numerous other professional affiliations.

He has been a long term member of the Editorial Board of *Connecticut Medicine.*

Connecticut Medicine

Editorials

Is DDT Carcinogenic?

Mr. William Ruckelshaus, director of the United States Environmental Protection Agency, after a three year court action, public hearing and at times, an acrimonious scientific debate, has decided that "the long range risks of continued use of DDT on cotton and most other crops is unacceptable and outweighs the benefits." Accordingly, he has slapped almost a total ban on the use of DDT in the United States after December 31st of this year. Exportation, however, is not prohibited.

When the ban comes into effect, the only uses of the pesticide that will be allowed in this country will be for public health service programs, for quarantine and for prescription drugs. The environmental burden of DDT, however, will decline only slowly even after a total ban on the pesticide. A study carried out at Oak Ridge National Laboratory suggests it will take between 15 to 20 years for the amount of DDT in human tissues to decline to half its present level even if no more DDT is pumped into the environment.

One of the arguments raised in the dispute about the dangers of DDT to man is by now an old and hoary one but whatever future research will show, there is now no evidence that the chemical causes cancer in man.

The medical evidence against DDT comes from studies in certain strains of mice which develop lesions in the liver when fed levels of DDT ranging from 10 to 250 ppm. These findings have been confirmed in France for the WHO, but they are a far cry from proof of carcinogenicity in man. For one thing, it is only certain strains of mice that develop the lesions, not all. For another, rats treated the same way may possibly produce lesions, though it is not at all clear that it does in this species. Studies on this subject are going on in Moscow but they are not yet completed.

The whole value of studying the type of lesions produced in mice has been called into question, recently by several workers (Rowe and Grant: Intern J Cancer 6:133, 1970). Some strains of mice which have been used for testing the carcinogenicity of DDT have a tendency to form lesions of the liver which calls into serious question the value of studies in mice. Equally, the types of lesions found in mice are not comparable with any found in man.

But if evidence gained from mice remains unconvincing, results from epidemiological tests so far are completely negative. WHO has such studies running in Brazil, Israel, India and also in this country among others, and there is no evidence that DDT levels between 50 and 100 times the "normal" levels found can increase the incidence of cancer. Studies over a 14 year period of one of Shell's manufacturing plants found that at very high levels there were small

THE COVER

PARACELSUS: MEDICINE'S STORMY PETREL

In the Renaissance "chemical kitchens" of Theophrastus Bombastus von Hohenheim (1493-1541), who boastfully called himself Paracelsus, many things were brewed: chemicals, polypharmacal mixtures, serious medical writings—and vitriolic, abusive attacks upon medical colleagues, religionists, and political officials. Swiss-born Paracelsus' controversies forced him to travel widely, move frequently. Labeled genius by some, quack by others, his medical efforts got results, and patients liked him. He attacked medieval "sacred cows," Galen and Avicenna, helped turn medicine from them to rational research, and he advocated use of chemicals in medicine.

clinical changes in humans, insufficient, however, to affect the subjects well being.

The position seems to be adequately summarized by the 1970 manual of the International Cancer Agency published this week which states that studies of the carcinogenicity of DDT in experimental animals "have shown that at very high doses liver tumors are produced in some mice." In other studies, levels of DDT stored in human fat tissues, sampled from different populations are being measured; although these levels are often very high, there is as yet no epidemiological evidence of any modifications of the cancer pattern in any of the populations studied.

Clearly, DDT cannot be given a completely clean bill of health. Possibly the lesions in mice are in fact significant and equally long term epidemiological studies of the sort WHO is currently running may yet reveal that DDT has a tendency to cause cancer over long periods, but to date no basis exists for Ruckelshaus' statement on this subject.

There is no doubt that Europe and the U.S. with their advanced technologies and especially the absence of malaria, can manage without DDT with some exceptions allowed by the government, but whether many poorer parts of the world can do so is another question. WHO and Food and Agriculture Organization of WHO will continue to recommend that where suitable substitutes are not available, DDT should continue in use.—L.H.N.

Reference

1. Is DDT carcinogenic? Nature 237:420, 1972.

The Diagnosis of Despair

The vast bulk of suicidal efforts spring from despair and helplessness before one or another of life's crises. Many people fail to express despair openly or they respond to helplessness in ways that make their desperation not recognizable. As a result, the diagnosis of despair can be difficult and elusive. It may, in fact, be as difficult a diagnostic problem as almost any other that general medicine presents to the physician. The present methods of the psychological examination constitutes a formidable coronary and the newest intern has more of it at his command than he generally realizes. With the appropriate techniques his experience and practice can sharpen to a fine point. But we must use them self-consciously and systematically.

The psychologic examination of the patient is a type of personal encounter or interview. We enter an interview as much as we make an examination. We do not stand outside of the interview but are constantly within its "field of force." We not only influence the object of the examination but we are being influenced by it. Most people seriously intending suicide are powerful radiators of influence. They shape the interview, its content, its emotive coloring, its exclusions, its inclusions as much as the physician ever does. Accordingly we need to take note throughout the interview of the feelings present. What are the principal feelings, do they change as the doctor and patient come in closer contact or are they flexible, are they appropriate, are they fixed and independent? Do they respond to changes in the subject matter under discussion and over what range? Or are any feelings present at all?

How do we decide this? We carefully scrutinize the patient, his face, mannerisms, movements. We listen to his voice and note his account of his "inner state." Does he describe being empty of feelings, the stopping of time, dulling of colors? We must then record our own response to him. Are we a bit bewildered or uneasy, then it may mean no clear emotive signals are coming across. The patient will look flat, blank without expressive mobility, describe an inner emptiness and leave the doctor without feeling. In this case it is safe to suppose that the feelings are deeply buried, not that they are not present. He gives no emotive clues either way for determination of the suicidal risk. The patient is going it secretly, alone and such patients have many times killed themselves. The obvious inference for us is to look elsewhere in the history, in the environment and recognize that thus far we are operating in the dark.

An important point is that we must not allow ourselves to be irritated when a patient is expressing anger or depression, his preoccupations, his changes in the sense of time, space, color and other moods that accompany these states of mind. We must not argue, or lecture him thereby enhancing his bitterness. We must expect to be annoyed or saddened by being in the presence of angry and depressed people and appreciate that our own reactions are also a part of the clinical picture. Otherwise it becomes more difficult to discuss or avoid an irritating patient who nevertheless needs help.

We must beware also of the depressed person who recovers suddenly without obvious reason and assumes a calm and settled purposefulness. Not a few of these have decided to die.

Closely allied to anger and depression is the problem that flatness and pseudo-cheerfulness presents. Some of the people who never complain really keep their troubles very secret as well as what they feel about them. Sometimes the independent brave front arises from fear and pride. Behind his cheerful courageous mask accumulates unspoken convictions of not being understood or his burdens appreciated.

It becomes necessary to determine what actually has happened placing the historical environment events beside the impressions of the interview. He must not glibly accept or give reassurance. He must restrict himself to considering how an average organism could be expected to respond to the loss of a spouse, the death of a friend, difficulties at work or financial problems. In this context does a patient's cheerfulness seem strange. We must be alert to emergency situations as we are in medicine. Reassurance is sometimes dangerous as it would be if we did nothing after a patient had been bitten by a rabid dog because the patient exhibits only a tooth mark.

The clinical value of the idea of a patient's defenses is great in psychological assessment. The patient is a battle ground of various forces, new ones appearing, old ones passing out of sight, defenses being erected or in danger of collapsing. The physician must assess the powers at work, anger, punitiveness of conscience, the patient's ideals, how he manages them, the strength and type of defenses and the extent of the dangers of invasion of other psychologic areas. Success in this requires historical and environmental information while we examine psychologically. One can throw light on the other. It is like the value of the clinical picture to the electrocardiographer in interpreting a tracing.

In performing a physical examination we are not shy about palpating an abdomen, or doing a pelvic examination. But there is a tendency to be shy about asking many psychologic or social questions. We often hesitate to ask the patient if he or she is contemplating suicide. The subject seems abhorrent. We know it will be a tender area to probe. Nevertheless we must ask the question gently, and listen after, not only for the words but for the emotion that follows. Suicidal thoughts are not unusual in the general population. A flat denial of them is more likely to be protective and defensive than honest. So we must continue to listen after the person has closed out the subject for good.

If we move too fast the current from our hands may remove the object further. Therefore the physician should go slowly, keep in mind the refractive errors the surface introduces and look for distant reverberations of his touch. We work through the medium of another person's mind. He may deny suicidal thoughts and intentions, seemingly change the subject to a meaningful symbolism, bridges, cliffs, loss of a significant person. Something has flooded to the surface of the interview.

Sooner or later if a conviction of the patients wanting to die persists we must take courage and ask, is her life now worth living. It is a kind of question doctors do not like to ask. We are forever working to preserve life and find it hard to acknowledge that there are people who want to die. We must not be unbelieving and indignant and break off the relationship. We must ask the question to ourselves and then out loud to the patient.

Perhaps the patient has lost that which gave sparkle and value to life, a son, daughter, husband, wife, home, job or ambition that made life worthwhile and make burdens light. The patient may list money, position, acquaintances, as reassurances which may, however, turn out to be only obligations and sources of guilt. The physician must know. He must find out what the patient has valued, and watch for signs of animation when "the best things" are touched and (note the patient's eyes) and determine independently if they are still available. Then we will say "life must not seem worth living any more." Then the hurt will come into view, the sadness, desire to die the real heartback, the fury.

The physician must hold on while this floods over him, repeating what he has just said. Clarify, do not reassure, criticize or abbreviate the interview. Keep the feelings and troubles in view. Only then will the doctor and the patient be ready to consider what to do.—L. H. N.

FROM THE EXECUTIVE DIRECTOR'S OFFICE

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Scientific Activities

CALL

SEMI-ANNUAL MEETING OF THE HOUSE OF DELEGATES

The 1972 Semi-Annual Meeting of the House of Delegates will be held at the Sheraton-Park Plaza Hotel, New Haven, Connecticut, commencing at 9:00 o'clock in the morning of Wednesday, December 6.

David A. Grendon, President
Kenneth F. Brandon, Speaker of the House
Louis C. Backhus, Secretary

INTRODUCTION OF RESOLUTIONS

Article V, Section 12, Par. 3 of the Bylaws of the Society Provides that:

All resolutions to be considered as regular business at any regular meeting of the House of Delegates must be in the hands of the Speaker not later than seventy-two hours before the opening of that meeting. All resolutions and recommendations published in the official agenda distributed to the members of the House prior to the meeting at which action is to be taken shall be considered as regular business. Resolutions presented later than seventy-two hours before the opening of a meeting will be referred for consideration as regular business by the House only when they are presented by the Council or accepted for consideration by majority vote of the delegates present. Any resolution which does not qualify in accordance with the aforesaid provisions for consideration as regular business may be accepted for action my a majority vote of the delegates present and, if so accepted, shall be referred at once by the Speaker to a reference committee. Any such reference committee shall consider resolutions referred to it and shall report, with recommendations to the House before adjournment of the meeting.

PROPOSED AMENDMENTS TO THE BYLAWS

The following proposed amendment to the Bylaws was presented to the House of Delegates on April 25, 1972 and was tabled for consideration and action at the next regular meeting of the House of Delegates.

In accordance with the Bylaws, this amendment will be published in Connecticut Medicine, "on one or more occasions prior to the next meeting . . . at which meeting the amendment shall be taken off the table and acted upon by the House of Delegates."

INTRODUCED BY EDWARD A. REM, NEW CANAAN

Purpose: To combine the Committee on Accident Prevention with the Committee on Emergency Medical Services.

Amendment

Article XI, Section 3, E—Socio-Environmental Division

Delete "Committee on Accident Prevention" and substitute therefor "Committee on Accident Prevention and Emergency Medical Services"

Delete "Committee on Emergency Medical Services"

Article XI, Section 5, Par. 21

Delete entire paragraph re "Committee on Accident Prevention" and substitute therefor the following:

Par. 21. Committee on Accident Prevention and Emergency Medical Services. The Council annually shall nominate to the House of Delegates a Committee on Accident Prevention and Emergency Medical Services to consist of not less than ten members and shall nominate the chairman thereof. The functions of the committee shall be to coordinate and integrate the efforts of Connecticut agencies concerned with the study and prevention of accidents and to study and keep informed on matters pertaining to the planning of programs to provide continuing medical care to the people of the state under disaster conditions and assure the availability of adequate medical services under emergency situations of less than disaster proportions, and to make recommendations to the Council and House of Delegates concerning these matters. In connection with the performance of these functions, the committee shall encourage members of the society to serve as consultants to community groups and other agencies active in the areas of accident prevention and emergency medical services and shall, when indicated, make recommendations to the Council for the implementation of legislative measures which the committee may deem advisable.

Article XI, Section 5, Par. 27

Delete the entire paragraph re "Committee on Emergency Medical Services".

Renumber paragraphs accordingly.

Summary of Actions
Council Meeting

Thursday, September 28, 1972

I. Attendance

Present in addition to the Chairman, Dr. K. F. Brandon, and the Vice-Chairman, Dr. D. A. Grendon, were: Drs. Cramer, Root, Jr., Spitz, Nolan, Weber, Jr., Fabro, Hess, Bradley, Johnson, Ragland, Jr., Harwood, Pelz, Roch, Nemoitin, VanSyckle, Canzonetti, Harkins, Milles, Freedman, Krinsky and Hastings.

Also present were: Mrs. Lindquist, Dr. West (NHCMA), Mr. Tomat, Mr. Sweeney and Dr. Richards.

Absent were: Drs. Backhus, Dean, Gardner, Rem, Wilson, Dambeck, Friedberg, LaBella, and Klare.

II. Routine Business

Approval of Minutes

As printed and distributed, it was VOTED to approve the minutes of the meeting of August 30, 1972, with one amendment as follows: With respect to the item titled "CSMS Opinion re CUPIS, Inc." (Page 3), it was VOTED, without dissenting vote, to record in the minutes "that the reason for defeat of the motion (re expression of CSMS opinion) was that the subject of the motion was not considered appropriate for Council action".

Life Memberships

It was VOTED to approve applications for Life Membership received from the following eligible Active Members:

Philip W. Fenney, V.A. Hospital, Newington (H) 1/1/73

Stephen L. Lirot, 53½ West Main Street, Meriden (NH) 1/1/73

Maxwell Pasternak, 2 Church St. So., New Haven (NH) 1/1/73

Andrew Vollero, 559 Howard Ave., New Haven (NH) 1/1/72

Election of Student Member

It was voted to elect to Student Membership a Connecticut residence who is enrolled in medical school as follows:

Ihor A. Krynycky, 151 Portsea St., New Haven
New York Medical College—Class of 1974
Pre-Med: Fairfield University
Parent: Roman Krynycky

Date of Next Meeting

The next meeting of the Council was scheduled for Thursday, November 2, 1972.

III. Old, New and Special Business

Resignations, Appointments, etc.

(a) *Committee on State Legislation*: It was VOTED to accept the resignation of Donald H. Peters, Kent, from membership on the Committee, and it was further VOTED to appoint Walter P. Reyelt, Jr., Sharon, to Committee membership for the balance of the 1972-73 term.

(b) *Committee to Study Perinatal Morbidity and Mortality*: It was VOTED to accept, with regret and thanks for past service, the resignation of Samuel D. Rowley, Hartford, as a member of this Committee. Dr. Rowley is leaving the state and has resigned his CSMS membership, effective 10/1/72.

(c) *Advisors to Connecticut Association of Medical Assistants*: It was VOTED to request the President, David A. Grendon, to designate four members of the Society as "advisors" to CAMA, as required by the CAMA bylaws. The terms of such advisors are one year. Dr. Grendon designated the following: Frederick C. Weber, Jr., Greenwich; William A. Ellis, Hartford; Richard E. Nicholson, Hartford; and David H. Clement, New Haven.

Reports—Fiscal Committee

The Council acted on a series of reports and recommendations of the Fiscal Committee as follows:

(a) *Request of SAMA*: It was VOTED to approve the recommendation of the Fiscal Committee re a request received from the Student American Medical Association as follows: That, acting through the CSMS Committee on Cooperation with the Medical Schools of Connecticut, students at the Yale and UConn medical schools be encouraged to attend the "mock student section meeting" which is to be held in Cincinnati, Ohio, in November, in conjunction with the AMA Clinical Meeting, and that the Committee make known to the appropriate medical school representatives (deans and/or students) the Council's offer to contribute $100 to each school to be used to help defray the expenses of one or more students who wished to attend the section meeting, or, in the event that no student was to attend from one of the schools, an additional $100 would be offered to the other if a student or students there attended.

(b) *Public Affairs Forum*: It was VOTED to approve the recommendation of the Fiscal Committee that the Committee on Public Affairs be authorized to hold a "Public Affairs Forum" at the Sheraton-Park Plaza Hotel, New Haven, on November 15, 1972, at an estimated cost of $1,200, such Forum to be open to the entire membership of the Society.

Report—Committee on Public Relations

It was VOTED to accept for filing a statistical report (prepared by staff) on the experience with leaflets Nos. 1 and 2 that had been printed and distributed under the Committee's pilot leaflet program. As noted under item (e) of the Fiscal Committee's report (preceding), it was VOTED to extend the pilot program to include a third leaflet on Medicare and to allocate $640 to fund its publication and promotion.

Report—Committee on Statewide Medical Planning

It was VOTED to receive for filing a copy of the contract issued by HEW in response to the Society's request for grant funds with which to conduct the "Connecticut Ambulatory Care Study", and to authorize the President, David A. Grendon, to sign the contract for the Society and return it to HEW for completion. It is understood that, following signing of the contract by HEW, an initial installment of the grant funds will be made available to the Society.

Report—Committee on Preliminary Study of Nominations
Report—Committee on Public Relations
Subject: The Journal

Reporting for the Committee on Preliminary Study of Nominations, Dr. Grendon presented two recommendations with respect to the nomination of a new Editor of *Connecticut Medicine*:

(a) That William F. Eckhardt, Jr., New Canaan, be appointed Editor of the Journal pro tem to serve until an Editor is elected by the Council.

(b) That the Council indicate what policy guidelines should be followed by the Editor of the Journal with respect to the future format and content of *Connecticut Medicine,* and that the election of a permanent Editor be deferred until such guidelines have been established by the Council.

It was VOTED to receive the report of the Committee on Preliminary Study of Nominations for filing, and it was further VOTED to approve the Committee's recommendation that William F. Eckhardt, Jr., New Canaan, be appointed Editor pro tem.

In conjunction with the Council's discussion of recommendation (b) of the Committee (above), it was VOTED to receive for filing a report of the Committee on Public Relations which recommended to the Council "that consideration be given to revamping the Journal from a scientific publication to one emphasizing political, social and economic issues".

Following lengthy consideration of both subject reports and recommendations, it was VOTED to adopt the following motion:

IT IS MOVED: That the Council adopt guidelines for *Connecticut Medicine,* and transmit said guidelines to the Committee on Preliminary Study of Nominations for consideration in the selection of a nominee as permanent Editor of the Journal, as follows: That *Connecticut Medicine,* while continuing original scientific articles, open its pages, more than in the past, to comprehensive review articles in medicine, surgery and socio-economics designed to continue the educational process for all Connecticut physicians.

Article—"The Yale Health Plan a Year Later"

It was VOTED to receive as information a copy of this article, published recently in the *Yale Alumni Bulletin,* and to refer the article to the

Committee on Public Relations for possible educational use with respect to members of the Society. The article reported the experience of the Yale Health Plan during its first year of operation, some of its policies and practices, several problems it has encountered, and the reaction to it of various segments of the Yale community (students, faculty, etc.).

The New License Registration Fee

Having been apprised by the Executive Director that a number of CSMS members are voicing strong protest against the new license registration fee (from $10 biennially to $150 annually) which was enacted by the 1972 General Assembly and becomes effective in January of 1973; that several members are questioning whether Phase 2 regulations do not preclude such an enormous increase; and/or whether a "fee" which is clearly not related to the administrative costs of registering licenses is "legal", the Council VOTED to direct staff to seek the opinions of CSMS legal counsel, legislative counsel and the Commissioner of Health on these questions and on possible avenues that might be used by the Society to seek redress from this discriminatory tax on physicians and other professional providers of health care services.

N.B.: *The foregoing is a summary of the proceedings and actions of the Council on September 28, 1972. Detailed minutes of the meeting are on file at 160 St. Ronan Street, New Haven, for perusal by an interested member of the Society.*

Placement Opportunities

Allergist—Board eligible or certified, preferably with special interest in chest disease as associate, partner and eventual purchaser of a large and growing practice in allergy and chest disease in an excellent professional social community. Availability immediately or by July 1, 1973 would both be suitable for introduction of the appropriate physician to assume this excellent opportunity—initially with the assistance of the present allergist and a staff of several registered nurse clinicians. Opportunity for immediate professional and economic growth is unparalleled.

Allergist—Third allergist needed for rapidly growing group practice in central Connecticut. Present partners under 40 years of age.

Associate Medical Director—Duties require performing preplacement, special, periodic and executive medical examinations. Assist in administration of corporate medical programs. Background in internal medicine and/or industrial medicine would be helpful. Salary negotiable.

Anesthesiologist—Position available as an associate to board certified anesthesiologist in an attractive, progressive general hospital. Excellent staff. Generous remuneration. Minimum amount of call with maximum vacation time. Write or call: Marvin Albert, M.D., World War II Veterans Memorial Hospital, Paddock Avenue, Meriden, Connecticut 06450. 203-237-5531.

Anesthesiologist—Two board eligible or certified anesthesiologist needed for large community hospital in the central part of the state.

Anesthesiologist—Position available in a medium sized hospital in north-central part of the state.

Anesthesiologist—To join three man group in a 180 bed community hospital. Inhalation therapy and respiratory physiology involved. Semi-rural area near the University of Connecticut. Contact Anesthesia Associates, P.O. Box 23, Willimantic, Connecticut 06226.

Chest Clinic Physician—35 hours. Excellent fringe benefits. Training available as needed. Contact: James A. Hanaghan, M.D., Director, Division of Tuberculosis Control, Hospital Care and Rehabilitation, Office of Public Health, 79 Elm Street, Hartford, Connecticut 06515.

Director Environmental Health—Provide medical advice and counsel in all aspects of environmental health. Experience as either a general practitioner, surgeon or orthopedic man, with industrial medicine. Salary open. Contact: BK Associates, Hartford. Phone: 527-9107.

Emergency Room—Ambulatory Services—Full time position in 250 bed community hospital. Excellent new facilities. Group renders emergency and primary care to 75,000 population. Apply Richard P. Fredericks, Executive Vice President, Bristol Hospital, Brewster Road, Bristol, Connecticut 06010. Phone 589-2000.

Family Practice—Young physician wanted to join group practice in northwestern part of the state. Internist will be considered.

Family Practice—Suburb of Hartford. Physician in search of an associate. Convenient location. Attractive community.

Family Practice—Northeastern sector of the state. Convenient to Boston and Rhode Island. Associate type arrangement possible with physician presently in practice.

Family Practice—Southwestern Litchfield County. Community hospital. Conveniently located.

Family Practice—Small community in the northwestern corner of the state requires a practitioner. Community search committee. Contact: Henry L. Barnett, M.D., Sheffield, Massachusetts.

Family Practice—Physician needed to assume practice. Home and office space available. Central Connecticut. Excellent location. Contact: William W. Dickinson, M.D., 63 Hill Avenue, Yalesville, Connecticut 06492.

Family Practice—Staff of the Bristol Hospital wishes to assist a new physician with setting up practice. Contact: Stuart Falk, M.D., 3 Woodland Street, Bristol, Connecticut 06010.

Family Practitioner or Internist—Wanted to assume an active practice in southern Connecticut. Hour from NYC. Physician wishes to retire soon.

In gram-negative sepsis*...
*Due to susceptible organisms

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For the patient with a terminal illness, PAIN past, present, and future can dominate his thoughts until it becomes almost an obsession. The more he is aware of the pain he is now experiencing, the more difficult it is to erase his memory of yesterday's pain, and to allay his fearful anticipation of tomorrow's pain. Surely the last thing this patient needs is an analgesic containing caffeine to stimulate the senses and heighten pain awareness. A far more logical choice is Phenaphen with Codeine. The sensible formula provides ¼ grain of phenobarbital to take the nervous "edge" off, so the rest of the formula can help control the pain more effectively. Don't you agree, Doctor, that psychic distress is an important factor in most of your terminal and long-term convalescent patients?

the analgesic formula that calms instead of caffeinates

Phenaphen® with Codeine

Phenaphen with Codeine No. 2, 3, or 4 contains: Phenobarbital (¼ gr.), 16.2 mg. (warning: may be habit forming); Aspirin (2½ gr.), 162.0 mg.; Phenacetin (3 gr.), 194.0 mg.; Codeine phosphate, ¼ gr. (No. 2), ½ gr. (No. 3) or 1 gr. (No. 4) (warning: may be habit forming).

Indications: Provides relief in severer grades of pain, on low codeine dosage, with minimal possibility of side effects. Its use frequently makes unnecessary the use of addicting narcotics. **Contraindications:** Hypersensitivity to any of the components. **Precautions:** As with all phenacetin-containing products, excessive or prolonged use should be avoided. **Side effects:** Side effects are uncommon although nausea, constipation and drowsiness may occur. **Dosage:** Phenaphen No. 2 and No. 3—1 or 2 capsules every 3 to 4 hours as needed; Phenaphen No. 4—1 capsule every 3 to 4 hours as needed. For further details see product literature.

Ⓒ III Phenaphen with Codeine is now classified in Schedule III, Controlled Substances Act of 1970. Available on written or oral prescription and may be refilled 5 times within 6 months, unless restricted by state law.

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Family Physician—Young practitioner needed to join three other family doctors in medium-volume, quality patient care practice. Modern practice in beautiful and affluent Long Island Sound community, 50 minutes from New York City. No obstetrics. No pediatric patients less than one year old. Salary first year leading to full partnership or corporate benefits in three years. Best possible opportunity to create and realize full potential in a versatile family practice in a stimulating and well staffed medical community.

Family Practitioner or Internist—Association with a general practitioner. Good practice in an urban setting in central Connecticut. No OB or major surgery. Part-time university student health work, if desired.

Family Practice or Internal Medicine—Associate needed to assume an active practice from physician who wishes to retire at the end of 1973. Fully equipped, modern office. Less than an hour to NYC.

Family Practitioner or Internist—Needed in growing community in central Connecticut. Associate arrangement with physician who has a large practice and wants to consider retiring.

Family Practice—Associate to join young physician in attractive community east of Hartford. Community hospital. Good location.

General Practice, Internal Medicine, and ENT: Needed in town of Torrington. 200 bed hospital. 50 physicians, over 50,000 population. Contact Joseph F. J. Curi, M.D., Chairman of Search Committee, Charlotte Hungerford Hospital, Torrington, Connecticut 06790. 203-482-0441.

General Practice and Internal Medicine—Both for solo and hospital based practice. Medium sized, north central community. Community hospital. Needed immediately.

General Medicine and Internal Medicine—Northwestern Connecticut community seeking to attract practitioners. Associate type practice possible.

Home and Hospital for the Aged in search of internist or general practitioner interested in geriatric medicine. Responsible for staff physicals. Salary and possible housing.

Industrial Medicine—Internist needed for large Connecticut employer. Contact: R. J. Leonard, M.D., Medical Supervisor, Pratt & Whitney Aircraft, East Hartford, Connecticut 06108.

Internist—Four man group in Fairfield, Connecticut, in search for an associate. Send resume to the Physician Placement Service.

Internist—General medicine. To join young internist in growing practice. Early partnership. New London-Mystic area.

Internist—Several opportunities with the State of Connecticut. Contact John J. Crowley, Personnel Administrator, 79 Elm Street, Hartford, Connecticut 06115 or Edmund Beutsch, Veterans' Home and Hospital, Rocky Hill, Connecticut.

Internist—Two internists, hospital based, seeking expansion into larger group.

Internist—Shore community only a few miles from New Haven. Physician will assist with establishing practice.

Cardiologist—Board certified to assume active practice in greater New Haven area.

Internist—Board certified or eligible with interest in allergy, rheumatology or infectious diseases wanted to associate with

Grove Hill Clinic. W. T. Livingston, M.D., Grove Hill Clinic, New Britain, Connecticut.

Internist—Third physician needed for internal medical practice in Hartford.

Internist—Need for cardiologist in the Waterbury area.

Internist—Preferably Board Certified or eligible, for chronic disease and cancer hospital having sections for TB in adults and children. 35 hr. week, 11 paid holidays, sick leave, 3 weeks vacation after one year of service. Salary level: $23,227-28,333. Paid health insurance and minimum charge for life insurance. Apartment available for physician with small family. Write Medical Director, Uncas-on-Thames Hospital, Norwich, Connecticut 06360.

Internist—Associate needed to join two other internists in southern Fairfield County. Conveniently located. Community hospitals in the vicinity.

Internist—Medium sized Berkshire Hills Community in northwest Connecticut witheasy access to Hartford, New York, Boston. Modern 85 bed hospital with new coronary intensive care unit. Academic affiliations available. Opportunities available with another ABIM certified specialist for multi-specialty group practice to provide guaranteed free time. Initial competive subsidy.

Internist or Family Practitioner—Needed for the Groton-New London area. Possible association with another practitioner.

Primary Physician needed for the town of Stonington. Coastal location. Town search committee: James M. Spellman, Stonington, Connecticut.

Occupational Medicine—Responsible for employee examinations and physicians. Background should include either practical or internal medicine. Two (2) different openings with (2) different companies. Salary open to high $20's. Contact: BK Associates, Hartford. Phone: 527-9107.

Ophthalmologist—Four vacancies. Each in the larger cities of Connecticut. Immediate opportunities.

Orthopedics—Immediately available due to sudden illness. Needed to assume active solo practice in rental, fully equipped and newly furnished 1700 square foot office in prestigious building and location. Write or call Howard Green, M.D., 111 East Avenue, Norwalk, Connecticut 866-0570 or 866-8100.

Orthopedic Surgeon—Associate needed to join three other orthopedic surgeons in central Connecticut.

Otolaryngologist—Associate needed to join two other physicians in an urban area in central Connecticut.

Otolaryngologist—Central Litchfield County in search for specialist.

Pathologist—Small community hospital in the greater New Haven area.

Pediatrics—Suburb of New Haven. Physician in search of associate.

Pediatrician—Send resume to Administrator, Day Kimball Hospital, Putnam, Connecticut. Search committee wishes to attract physicians.

Pediatrics—Needed for growing community in the central Connecticut area. Small community hospital. Search Committee willing to assist with the establishing of a practice.

Pediatrics—Third pediatrician needed to join two young Board certified, Fellows of AAP, eastern part of the state. Large, general pediatrics practice. Good first year salary with corporate benefits and full partnership after two years.

Pediatrics—Additional coverage needed in the New London area.

Psychiatrist—Part time opportunity with methodone Clinic under supervision of town department of health. Coastal community in southwestern part of the state.

Psychiatrist—For greater Bridgeport Community Mental Health Center to be opening in October, 1972. Contact: Robert J. McCully, 1862 East Main Street, Bridgeport, Connecticut.

Psychiatrists—Needed for state facility. Write Superintendent, Norwich Hospital, Norwich, Connecticut 06360.

Psychiatrists—Openings in mental hospitals and mental health clinics under the auspices of the State of Connecticut. Write Personnel Administrator, Department of Mental Health, 90 Washington Street, Hartford.

Psychiatrist—Attractive suburban community north of Hartford has opportunity for psychiatrist in professional grouping.

Surgery—Thoracic surgeon who will do general surgery or general surgeon with thoracic subspecialty. Central Connecticut. Conveniently located between Hartford and New Haven. Medium sized community.

Associate—Leading to full partnership—needed by young family practitioner in Fairfield County, Connecticut; excellent schools; 400 bed hospital located nearby; send curricula vitae to CSMS.

Child Psychiatrist—Chief administrator of small, inner-city child guidance center with core staff of many disciplines—$25,598–$30,974. All State benefits provided. Write: C. Launi, Connecticut Department of Mental Health, 90 Washington Street, Hartford, Connecticut 06115. 203-566-5237.

Director of Environmental Health—Physician needed to be liaison between home office of insurance company and industrial clients. Industrial experience as physician required. To make recommendations on how to improve industrial environment and lower insurance rates.

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Placement Wanted

Allied Personnel

General clinical lab technician or lab assistant to a physician(s): graduate of Vermont College and Boston City Hospital. Gretchen C. Stahl, 75 Seymour Avenue, Derby, Connecticut.

X-Ray Technician: Registered. Graduate of Bridgeport Hospital School of X-Ray Technology. Lorraine R. Bradley, 29 Church Hill Road, Trumbull, Connecticut 06611.

Physician's assistant in general medicine, pediatrics or general surgery: graduate of Cleveland Clinic Foundation. 24 years old. Joseph P. Checca, Jr., 1910 South Hulmac Ct., Apartment D, Columbus, Ohio 43229.

Laboratory Assistant: B.A. and M.S. from University of

Connecticut, John M. DaSilva, Jr., 3 Sun Street, Enfield, Connecticut 06082.

Physician's Assistant—40 years of age. College degree. Available December 1972. Presently in training under U.S. Public Health Service Program. Robert B. Weinheimer, 25 East 213 Street, Bronx, New York 10467.

MEDIHC Program—Former military medics; number of candidates available. Contact: Henry J. Miller, Military Experience Directed into Health Careers, 640 Chapel Street, New Haven, Connecticut 06510. Phone: 865-0862.

Anesthesia—32 years old. Board eligible. (FLEX) Presently in practice. Interested in medium sized community in group or associate type practice. Husband a general surgeon. Celia Mercado- Sagullo, M.D., 138 Terrace Place, Brooklyn, New York 11218.

Emergency Room Physician — Connecticut license. Desires position from March, 1973, to July, 1973. ER experience. Presently in the service. Perin W. Diana, Jr., M.D., USA Medical Center, Box 130, APO San Francisco, California 96331.

Family Practice—35 years old. Presently in practice. Will have Connecticut license by early November. Interested in group or solo practice. Indarjit Singh, M.B., Ch.B., 14 Robinhood Drive, Dundas, Ontario, Canada.

Internal Medicine-Hematology—Board eligible. Prefers group practice. 32 years old. Available immediately. Eugene F. Cheslock, M.D., 107 Beverwyck Drive #11, Guilderland, New York 12084.

Internal Medicine—Board eligible. 34 years old. Connecticut license. Presently available. Associate practice. Willing to assume practice. NYU and Yale trained.

Dermatology—Board Certified. Presently Chief of Dermatology at the Naval Dispensary, Washington, D.C. Interested in associate, partnership or solo practice in a metropolitan area. Robert P. Feinstein, M.D., 9146 Springhill Lane, Greenbelt, Maryland 20770.

Internist—Hematology and Oncology. Available January 1973. Board eligible. Group or associate practice. 33 years old.

Internist—Cardiology—Specialist in Rheography. Connecticut license. Presently in practice in Greece. Available in 10 months.

Cardiology—30 years old. Board certified in internal medicine. Board eligible in cardiology. Private practice or hospital based. Richard H. Landesman, M.D., 477 Comstock Place, Highland Park, Illinois 60035.

Internist—30 years of age. Board certified. Interest in general internal medicine with nephrology as sub-specialty. Desires group practice in large community. Neil P. Dreyer, M.D., 1835 Corporal Kennedy Street, Bayside, New York 11360.

Internist—Cardiology. Board certified. Presently on cardiology fellowship at Ohio State, 30 years old. Group, associate, or institutional practice. Toby R. Engel, M.D., 2043 D Prince George Drive, Columbus, Ohio 43209.

Internal Medicine—Oncology and Hematology. 32 years old. Board eligible. Group, associate or institutional practice. Large or medium sized community. Harold Glucksberg, M.D., 70-28 17th N.E., Seattle, Washington 98115.

Internist—Connecticut license. Board eligible. Interested in pulmonary diseases. Solo or group practice in large or medium sized community. Available in December 1972.

Internist—Connecticut license. Board eligible. Desires group or associate practice in medium sized community. Greater New Haven area, if possible. Richard J. Barse, M.D., 195 Hepburn Road, Hamden, Connecticut 06517.

Internist—Cardiology. Board eligible. Desires group or associate practice in large community. Available July 1973.

Internal Medicine—Gastroenterology—Board eligible. 31 years of age. (FLEX) Group or associate or institutional practice in large or medium sized community.

Internal Medicine—Pulmonary Diseases. Group or associate or institutional practice. National Boards. 30 years old.

Internist—Gastroenterology—Board certified. 33 years old. Group practice in large or medium-sized community.

Internist—Board eligible. Connecticut license. Desires medium or small community. Solo, group or associate practice. 32 years of age. Presently at Alaskan Native Medical Center. John J. Posner, M.D., 7420 Branche Drive #A, Anchorage, Alaska 99502.

Internal Medicine—Emphasis on ICU-CCU and cardiology. 30 years old. Board eligible. Group practice in medium sized community. Abner B. Preacher, Jr., M.D. University Hospitals—Dept. of Medicine Iowa City, Iowa 52240.

Internal Medicine—Available early spring 1973. Group practice in larger community. Boards taken in June 1972. Presently at Mayo Clinic. Sheldon L. Markowitz, M.D., 5018 16th Avenue, N.W., Rochester, Minnesota 55901.

Rheumatology—31 years old. Board eligible. Desires group or associate practice. Presently in the service. Stephen B. Miller, M.D., 700 Locke Court, Virginia Beach, Virginia 23462.

Internal Medicine—Available April 1973. Board eligible. Desires small group practice in medium sized community. Frederick W. Neinas, M.D., 1520 S.E. 9th Avenue, Rochester, Minnesota 55901.

Internal Medicine—Rheumatology—33 years old. Board eligible. Group or associate or institutional practice. Desires southwestern or western Connecticut. Kenneth J. Lippman, M.D., 305 E. 24th Street, New York City, New York 10010.

Cardiologist—Board eligible. Board certified in internal medicine. 30 years of age. Interested in medium or small sized community. Group, associate or solo practice. Robert G. Matthews, M.D., 219 Race Street, Pittsburgh, Pennsylvania 15218.

Internist—Board Certified. Board eligible for cardiology. Presently staff cardiologist at Naval Hospital in Portsmouth, Virginia. Group, associate or institutional practice desired in larger or medium sized community.

Internal Medicine-CV—National Boards, Board certified. 48 years old. Connecticut license. Interested in hospital related position or group practice. John J. Mead, M.D., 211 East 53rd Street, New York, New York 10022.

Internal Medicine—Available January 1973. Board eligible. Connecticut license. Solo or associate practice. 42 years of age. Bernard L. Meyers, M.D., 18 Second Street, Troy, New York, 12180.

Internal Medicine and Endocrinology—Available immediately. Board eligible. FLEX. 42 years old. Group or associate type practice. T. N. Paul, M.D., 2900 S. Lincoln Avenue, North Riverside, Illinois 60546.

Internal Medicine—Part time work in Hartford area. Board eligible. Connecticut license. Clinic work or ER will be considered. 29 years old.

Internal Medicine-Hematology — Available December 1972. Board eligible. Medium size community with group or associate practice desired.

Internal Medicine-Cardiology—Board eligible. 35 years old. (Flex) Prefers institutional type appointment.

Internal Medicine—Board certified. Large or medium sized community in group or associate practice. Available in January. Subspecialty—nephrology.

Neurology—Board eligible. Group or associate practice in medium sized community. 31 years old. Lanny Edelsohn, M.D., 241 Winchester Street, Brookline, Massachusetts.

Neurology—Board eligible. 33 years old. Group or associate practice in medium sized or small community. Richard M. Sax, M.D., 3541 East Glencoe Street, Coconut Grove, Florida 33133.

Neurology—Connecticut license. Board eligible. Solo, Group, Associate or institutional practice. 32 years of age. Available in June.

Ob/Gyn—Board eligible. Associate, Group, Institutional or Solo Practice. Connecticut native wishing to return to state. 28 years of age. Presently at Georgetown Medical Center.

Ob/Gyn—32 year old Ob/Gyn desires group or associate practice. University-trained, Junior Fellow, board eligible with military obligation complete July, 1973. Married with two children. Ronald A. Cwik, M.D., U.S. Army Hospital, Box 607, Fort Ord, California 93941. (408) 242-4075—office, 242-5312—home.

Ob/Gyn—36 years old. Desires group or associate practice in medium sized community. Available July 1973.

Ob/gyn—Board exams taken in June. FLEX. Interested in group practice. Elie N. Shuhaibar, M.D., The Western Pennsylvania Hospital, 4800 Friendship Avenue, Pittsburgh, Pennsylvania 15224.

OB/GYN—Board eligible. Connecticut license. Available early 1973. 36 years of age. Group, associate or institutional type practice.

Ophthalmologist—34 years old, New York license. Completing residency at St. Lukes Hospital, NYC. Available in September.

Ophthalmologist—34 years old. Board eligible. National Boards. Large or medium sized city desired. Group, solo, associate practice desired. Available immediately.

Orthopaedics—Board certified. Connecticut license. Desires large or medium sized community in group or associate practice. Presently staff orthopaedic surgeon at Eglin Air Force Base. 32 years of age. Gerald L. Smolensky, M.D. 729 Osceola Circle, Eglin AFB, Florida 32542.

Orthopedic Surgery—35 years old. Board eligible. Associate practice. Trained in spine and hand surgery.

Orthopedics—Board eligible. (FLEX) 32 years old. Associate position desired. Swiss trained. Residency at Mt. Sinai, New York City.

Orthopedics—Board certified. FLEX. 32 years old. Institutional appointment desired. S. G. Khrishman, M.D., 407 Genessee Street, Orlean, New York 14760.

Otolaryngologist—Board certified, 34, married, five-year university residency training in all phases of otolaryngology and maxillofacial surgery. Completing military service. Available in July 1973. Seeking private practice, association, group or solo, practicing all aspects of the specialty. Contact Gustav Braun, M.D., Box "O", Balboa Heights, Canal Zone.

Pediatrics and Pediatric Hematology—Board eligible, 37 years old. New York license. Solo or group practice. Chi-Yen Kuo, M.D., 20 St. Paul's Court, Apartment 1D, Brooklyn, New York 11226.

Pediatrics—38 years old, Board certified, Connecticut license through endorsement. Fellow of A.A.P. Available with three month's notice. Prefers salaried arrangement for first year. Group or associate practice.

Pediatrics—Board eligible. Will consider clinic or public health position in western part of the state. 28 years of age. Married. Available immediately. Part or full time. Ann H. Hines, M.D., 82 South Street, Danbury, Connecticut 06810.

Psychiatry—Part time position in adult and child psychiatry. Connecticut license. Guilford or shore area desired. Board certified.

Radiologist—Board eligible, Connecticut license. 48 years of age. Also trained in neuroradiology.

Radiologist—42 years old. Fully certified by the American Board of Radiology. Eligible for a Connecticut license. G. H. Hussein, M.D., 2411 Fifth Street, Fort Lee, New Jersey 07024.

Surgery-General—National Boards. Board eligible. Group or associate practice in large or medium sized community 100 miles from New York City. 32 years of age. Available February, 1973. George A. Knaysi, Jr., M.D., 14 LeMoy Street, Fort Bragg, North Carolina 28307.

Surgery-General—Board eligible. Presently full time hospital staff. (FLEX) solo or group practice in medium sized community. Wife practicing anesthesiologist. Nestor M. Segullo, M.D., 138 Terrace Place, Brooklyn, New York 11218.

Surgery—General surgeon, board certified, university trained, extensive trauma and vascular experience, desires associate or group situation. Available December 1972.

Surgery—General and thoracic. Board certified. Small or medium sized town. Group or associate practice. Available immediately. Harold McWilliams, M.D., 3119 Plymouth Rd., Norristown, Pennsylvania 19403.

Urology—Board eligible. Presently in practice. Available in 2 or 3 months. Group or associate practice preferred. Solo practice will be considered. 35 years of age. Wishes to move back east. Harvard and Columbia trained. Southern Connecticut preferred. Albert V. Assili, M.D., 40184 San Carlos Place, Fremont, California 94538.

ANYONE INTERESTED IN THE ABOVE IS ASKED TO CONTACT THE PHYSICIANS' PLACEMENT SERVICE, 160 ST. RONAN STREET, NEW HAVEN, CONNECTICUT 06511

Have you moved recently? Please send any changes of address to CONNECTICUT MEDICINE, 160 St. Ronan Street, New Haven, Conn. 06511. We need your help in keeping our mailing list up to date. You are our best source of information.

ANNOUNCING

181st ANNUAL MEETING

CONNECTICUT STATE MEDICAL SOCIETY

APRIL 24, 25, 26, 1973

HARTFORD HILTON HOTEL,
HARTFORD

* * *

TUESDAY, APRIL 24

ANNUAL MEETING OF THE HOUSE OF DELEGATES

* * *

WEDNESDAY, APRIL 25 — THURSDAY, APRIL 26

SCIENTIFIC PROGRAM

MEETINGS OF SECTIONS AND

GUEST ORGANIZATIONS

* * *

CALL FOR SCIENTIFIC EXHIBITS

The Scientific Exhibits Committee announces that exhibit applications are now being received for the annual meeting. Exhibits large or small, not more than 7 feet deep and eight feet wide, are welcomed from members, sections of the Society and hospital staffs.

Applications for exhibit space may be obtained from the

Connecticut State Medical Society office

160 St. Ronan Street, New Haven, 06511

—: DEADLINE FOR EXHIBIT ENTRIES FEBRUARY 1, 1973 :—

"Drug research gives me the tools that save lives."

A family doctor looks at new developments in the pharmaceutical industry. And he speculates on the future.

When I look back at some of my old records, I'm constantly reminded of the changes that have come about in medicine just during the past twenty-five years. Some of the diseases I treated and prayed over in the '40's are found mostly in medical history books now.

Thanks to drug research and development, we've made substantial gains in the control of cardiovascular disease, diabetes, malaria, mental illness, strep and staph infections, meningitis and a long list of ailments. It seems like only yesterday when a diagnosis of pneumonia was almost the kiss of death. Now, with modern medical techniques and drug therapy, we can offer some real help.

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I hear questions about the three billion or so dollars spent by the drug industry in research during the past ten years . . . working on new and better drug products. It does seem like quite a bit of money to spend, and I realize some of it goes into dead ends. That's the problem with research, any research . . . you often don't know where you're going until you get there. I want all the tools I can get to help my patients. I want more drugs and more effective drugs. If they mean less pain, longer lives and more productive careers for those I treat . . . well, that's what really counts.

Another point of view . . .
Pharmaceutical Manufacturers Association, 1155 Fifteenth Street, N.W., Washington, D.C. 20005.

This advertisement has been reaching consumers thru
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Vitamin A	2,500 U. S. P. Units
Vitamin D	250 U. S. P. Units
Thiamine Mononitrate	2.5 mg.
Riboflavin	2.5 mg.
Ascorbic Acid	25.0 mg.
Folic Acid	0.125 mg.
Vitamin B-12	1.5 mcg.
Methionine	12 mg.
Choline Bitartrate	15 mg.
Inositol	10 mg.
Calcium Pantothenate	2.5 mg.
Pyridoxine	0.25 mg.
Copper (from Copper Sulfate)	0.25 mg.
Zinc (from Zinc Oxide)	0.25 mg.
Iodine (from Potassium Iodide)	0.075 mg.
Calcium (from Dicalcium Phosphate)	72.5 mg.
Phosphorus (from Dicalcium Phosphate)	55 mg.
Potassium (from Potassium Sulfate)	2.5 mg.
Manganese (from Manganese Sulfate)	0.5 mg.
Magnesium (from Magnesium Sulfate)	0.5 mg.

As the "middle years" exact their metabolic toll, complaints are vague, but therapy can be specific. Testand-B, as an anabolic stimulant in male and female climacteric, senile vaginitis, decreased muscle tone, protein depletion states, osteoporosis and loss of body mass, helps compensate for the metabolic changes of aging. The androgen/estrogen combination, plus the comprehensive nutritional complex provided by Testand-B helps patients feel better physically and emotionally.

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A hormonal, nutritional supplement

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Electrocardiogram of the Month:

Manchester Memorial Hospital
Manchester, Connecticut

Prepored by
MARTIN DUKE, M.D.
From the Cordiology Service,
Monchester Memoriol Hospitol
Monchester, Connecticut 06040

Pseudo Arrhythmias During Patient Monitoring

Conventional electrocardiographic oscilloscope monitors register electrical activity both of the heart as well as of artifacts originating from equipment and patient. Trained personnel can usually recognize these artifacts for what they are without difficulty. However, the rapidity with which events occur within a coronary care unit or operating room may lead to the misinterpretation of an artifact as an arrhythmia, with resultant unnecessary and possibly harmful therapy.

The following two cases illustrate artifacts produced by involuntary patient movements. They are presented in order to reemphasize that even in this age of gadgetry and automation, it is often important to examine a patient during an "arrhythmia" prior to proceeding with what might appear to be a situation calling for antiarrhythmic therapy, i.e., drugs, electrical shock.

While being observed in the coronary care unit for a possible myocardial infarction, a patient with known Parkinson's disease suddenly developed a pattern on the oscilloscope monitor closely resembling ventricular flutter-fibrillation (Figure 1). Personnel immediately rushed to the patient's bedside where she was found to be awake, breathing, and having a Parkinson tremor primarily involving the right side of her body. The nurse seized the right hand, immediately stopping both the tremor and the oscilloscopic representation of the "arrhythmia" (Figure 1). This series of events was repeated many times, and until monitoring was stopped made for an uncomfortable air of continued alertness and expectancy in the unit.

The second case has been previously reported[1] and only the electrocardiograms will be reproduced again. They demonstrate electrical potentials produced by fine myoclonic movements of chest wall muscles simulating on the monitor a supraventricular tachycardia (Figure 2).

The occurrence and potential misinterpretation of electrocardiographic artifacts while monitoring patients are known to occur.[2-5] "Pseudo arrhythmias" similar to those described above reemphasize that personnel using these valuable aids for diagnosis and treatment are not exempt from returning to the patient's bedside for clinical confirmation of their findings.

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1. Duke, M.: Unusual artifact in electrocardiography, JAMA 211:829, 1970.

2. Arbeit, S. R., Rubin, I. L., and Gross H.: Dangers in interpreting the electrocardiogram from the oscilloscope monitor, JAMA 211:453-456, 1970.

3. Cheng, T. O. and Efpraxiades, J.: Pseudo-atrial flutter, Chest 57:290-292, 1970.

4. DeSanctis, R. W., Block, P., and Hutter, Jr., A. M.: Tacharrythmias in myocardial infarction, Circulation 45:681-702, 1972.

5. Rubenfire, M. and Rosenzwerg, S.: Electrocardiographic artifacts simulating atrial flutter. JAMA 220:1130, 1970.

6. Marriott, H. J. L. and Fogg, E.: Constant monitoring for cardiac dysrhythmias and blocks. Mod. Conc. Cardiov. Dis. 39:103-108, 1970.

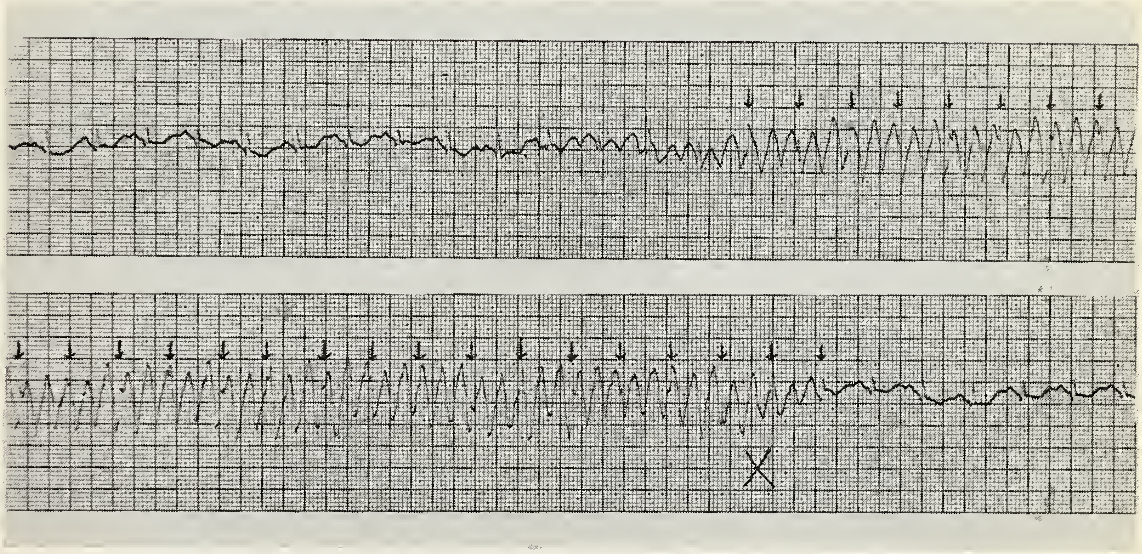

Figure 1

Apparent "ventricular flutter-fibrillation." Arrows indicate the hidden normal QRS complexes. At X the Parkinsonian tremor ceased and the "arrhythmia" disappeared.

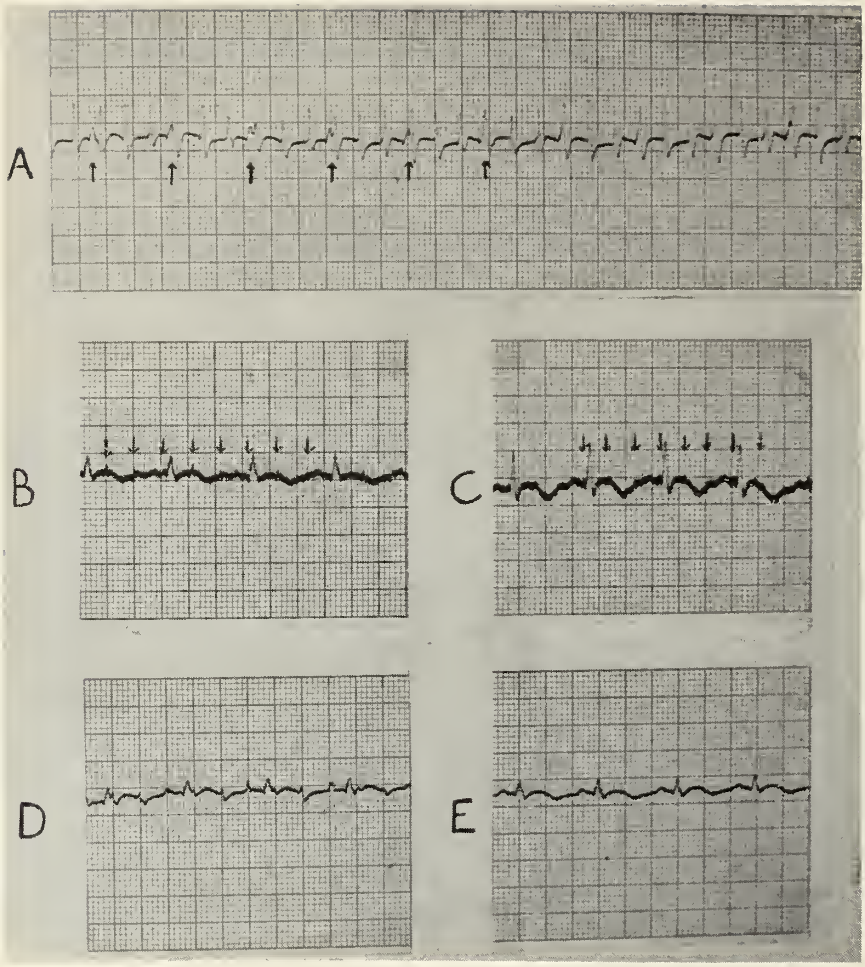

Figure 2

A — "Tachycardia" on oscilloscopic monitor is almost regular, but with slight variation in the shape of complexes. The patient's QRS pattern (arrows) is difficult to see. (Lead MCL_1[6]).

B and C — Leads I and V6 respectively recorded during the "tachycardia," revealing rapid electrical potentials coincident with the observed myoclonic movements of the patient's chest wall muscles. Normal sinus rhythm is present.

D and E — Gradual cessation of the myoclonic movements and emergence of the normal QRS complexes on the oscilloscopic monitor. (Reproduced with permission of the JAMA).

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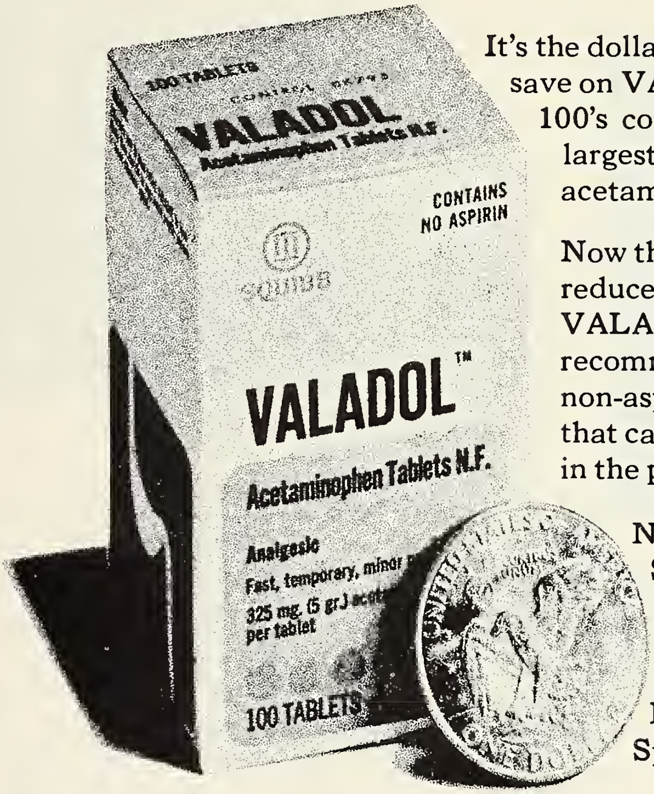

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OBITUARIES

Arthur J. Geiger, M.D.
1905-1972

The medical community of Connecticut was saddened recently to learn of the death of Arthur J. Geiger, M.D. on August 20th at his summer home in Wellfleet, Massachusetts.

Before his retirement, Dr. Geiger was one of the most highly respected and beloved practicing physicians in the State. With his parents he emigrated from Austria-Hungary when he was a small child. He began primary school knowing only enough English to count to ten, but by graduation from high school had become valedictorian of his class. He had planned to go to work in his father's small hardware store in Suffern, New York, but his school principal persuaded his father to send him to college, instead. With the help of a scholarship, he attended Cornell, where he was an excellent student, attaining the distinction of election to Phi Beta Kappa in his junior year. He was stimulated to enter medical school by a general practitioner in Suffern, and graduated from Harvard Medical School in 1931 as an A.O.A. student. Internship and residency training brought him to Yale where he worked under Francis Blake in the Department of Medicine, then with Louis Goodman and Alfred Gilman in the Department of Pharmacology, prior to assuming the responsibility for the ECG laboratory and Cardiology section of the Department of Medicine. As a member of the full-time faculty, he made many contributions to the literature on cardiovascular disease, and was recognized as one of the most informative and stimulating teachers, as well as one of the most astute clinicians in the School. As Clinical Professor of Medicine, he continued to participate in academic activities after he entered cardiology practice in 1953. He developed a state-wide reputation as a consultant in the field of cardiovascular disease who always displayed great understanding of the problems of the general practitioner and great sympathy for the anxieties and suffering of his patients. It is ironic that his retirement in 1966 was enforced by angina pectoris —and the very coronary disease to which he had devoted so much of his own attention and effort.

One of Dr. Geiger's major interests was the Heart Association. He was one of the original group which organized and incorporated the Connecticut Heart Association and was its first president. He was active in the Scientific Councils of the American Heart Association and served as the Affiliate representative to the Board of Directors of the American Heart Association in the early 1960's. He was also a member of the American College of Physicians, the New Haven County Medical Association, the Connecticut State Medical Society and the A.M.A.

Dr. Geiger's professional attainments did not obscure his friendliness or his warm relationships with both patients and friends. As a young man, he played the piano well and later developed interests in painting and in skating. He was a planter of trees, both in Maine and on Cape Cod, and was working during his retirement toward preservation of the Florida coastline near his Winter home. His refreshing optimism complemented the love of his family and friends in supporting his courageous attitude during the long illness which finally claimed his life.

He is survived by his wife, Edith Rogers Geiger; his mother, Mrs. Frank Geiger of Woodhaven, N.Y.; his son, Harvey of Columbus, Ohio; his daughter, Mrs. James Spencer of Greenwich; his sister, Mrs. David Winter of Woodhaven, N.Y., and two granddaughters.

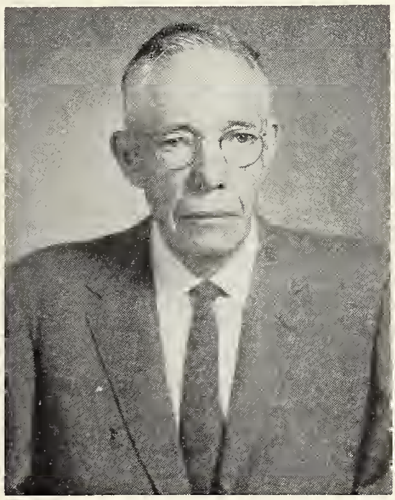
Allan V. N. Goodyer, M.D.

Edward H. Wray, Jr., M.D.

1903-1972

Edward H. Wray, Jr., M.D., died April 11th, at his home on North Street, Litchfield, Connecticut. The cause of death was congestive heart failure with pulmonary emphysema of five years duration.

He was born in Denton, Texas on February 7th, 1903 where he spent his early school years. He received his Bachelors Degree from Yale University in 1923. He received his Medical Degree in General Practice from Yale University in 1932 and interned at Bridgeport Hospital from 1932 to 1933. He was resident at Bellevue Hospital in obstetrics and gynecology from 1934 to 1935. He was then resident physician at Kent School for two years, after which he entered General Practice in Litchfield.



He was a member of the United States Naval Reserve Corp and was called to active duty in 1941 during World War II. He was senior medical officer in several Naval engagements in the Pacific on the U.S.S. Windsor and was discharged in 1946 with the rank of Commander.

He returned to practice in Litchfield and was a Senior Attending Physician at Charlotte Hungerford Hospital. He was also Medical Examiner in Litchfield for ten years.

He was a member of the Litchfield County Medical Association, the Connecticut State Medical Society and the American Medical Association.

In 1922 he married Anna Berdan of New Haven, his devoted helpmate. She was the daughter of John Berdan, Professor of English at Yale University. She survives him with his son Edward and daughter Mary Stone.

He was a devoted practitioner of medicine and will be greatly missed by all of us.

W. Bradford Walker, M.D.

In Memoriam

Cornwell, J. Robert, New York University Medical School, 1954. Dr. Cornwell was a practicing radiologist in the Litchfield area since 1956. He was formerly chief of staff at New Milford Hospital and a veteran of World War II, serving with the U.S. Navy. He was a member of the Litchfield County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Cornwell died September 21, 1972 at the age of 49.

Ente, Howard K., New York University College of Medicine, 1950. Dr. Ente was a practicing physician in the Fairfield area since 1953. Dr. Ente helped establish and was director of the Poison Control Center at Norwalk Hospital and coordinated activities with State and Federal agencies. He had served as secretary-treasurer of the Medical Board of Norwalk Hospital and as staff parliamentarian. He was a member of the Fairfield County Medical Association, the Connecticut State Medical Society and American Medical Association. Dr. Ente died September 2, 1972, at the age of 46.

Greenblatt, Jacob, Louisiana State University, 1939. Dr. Greenblatt was a pediatrician in the Fairfield area since 1939. He was a member of the American Academy of Pediatrics, Director of Pediatrics at St. Joseph's Hospital and senior attending pediatrician at Stamford Hospital. He was a member of the Fairfield County Medical Association and the Connecticut State Medical Society. Dr. Greenblatt died September 25, 1972, at the age of 57.

Landecker, Norbert, University of Berlin, 1924. Dr. Landecker was a practicing physician in the Fairfield area since 1941. He was a member of the Fairfield County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Landecker died Septmeber 14, 1972, at the age of 73.

Riesman, John Penrose, University of Pennsylvania, 1938, Dr. Riesman was a surgeon in the New Haven area since 1946. From 1948 until 1971 Dr. Riesman was in private practice in surgery, on the staffs of Yale-New Haven and St. Raphael's hospitals and a consulting surgeon at Griffin Hospital in Derby. He was also a clinical instructor and later a clinical associate in surgery on the faculty of the Yale School of Medicine. He was a member of the New Haven County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Riesman died September 8, 1972, at the age of 60.

Meeting Notices

The information on this "notices" page is offered as a service of all specialty groups and allied health agencies in order to publicize continuing medical education programs available to subscribers. The deadline for publication in Connecticut Medicine *is the tenth of the month preceding, date of issue. Send copy to: Connecticut State Medical Society, 160 St. Ronan Street, New Haven, Connecticut 06511.*

GENERAL

September, 1972-May, 1973
6:00 P.M.-8:15 P.M.
Basic Sciences Related to Clinical Medicine
Lawrence and Memorial Hospitals
New London, Connecticut
Contact: Edward Gipstein, M.D.
Director of Medical Education

November 26-29—Sunday—Wednesday
American Medical Association
Clinical Meetings
Cincinnati, Ohio

April 24, 25, 26, 1973
181st Annual Meeting of the Connecticut State Medical Society
Hartford

ARTHRITIS

December 7-9—Thursday—Saturday
American Rheumatism Association
Section of the Arthritis Foundation
Thursday's Program—Six Clinical
Postgraduate Seminars for the
Practicing Physician
Pittsburgh Hilton Hotel, Pittsburgh, Penns.
Contact: Arthritis Foundation
1212 Avenue of the Americas,
New York, New York 10036

CARDIOLOGY

December 8-10—Friday—Sunday
American College of Cardiology
Fifth Annual Symposium: Paths of Progress in Cardiovascular Disease
Americana Hotel, New York City

PSYCHIATRY

December 5—Tuesday—11:00 a.m.
Psychopharmacology
Alberto DiMascio, Ph.D.
Connecticut Valley Hospital
Middletown

December 7—Thursday—10:30 a.m.
Review of the Psychobiological Research of Behavior
James R. Stabenau, M.D.
Connecticut Valley Hospital
Middletown

SURGERY

January 18, 1973—Thursday
Afternoon and Evening
Annual Meeting of the
American College of Surgeons
Connecticut Chapter
Hotel Sonesta, Hartford
Contact: Francis M. Hall, M.D.
140 Woodland Street
Hartford, Connecticut

Stunkard's Method For Treating Obese Patients

(*JAMA*, 220:852, May 8, 1972).

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NEW BOOKS IN REVIEW

MENTAL HEALTH TRAINING AND PUBLIC HEALTH MANPOWER. Stephen E. Goldston, Ed.D., M.S.P.H. and Elena Padilla, Ph.D. National Institute of Mental Health, Rockville, Maryland, July, 1971. pp. 294. For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. $2.74 (paper cover).

Reviewed by: BORIS M. ASTRACHAN

In most professional educational programs public health concepts have been a consistent but distinct counterpoint to instruction in clinical practice. Indeed this separation of clinical work and public health practice is generally reflected in organizational separation, with activities in the clinical area usually being conducted by individual practitioners or under voluntary agency or private sponsorship, and public health activities most often being conducted under governmental sponsorship or funding. One historical exception has been in treatment systems for the mentally distressed. These treatment programs have been utilizing public health principles and practice in their work with increasing frequency and have been expanding their activities into the areas of prevention of illness and health protection and enhancement. In this one area integration of clinical practice and public health practice often has been legislatively mandated.[1] However, specific training programs for mental health practitioners were not an important area of training in Schools of Public Health until the late 1940's and 1950's when under the sponsorship of the National Institute of Mental Health funds were made available for the development of mental health training programs in schools of Public Health. As Goldston and Padilla note (pg. iii), programs were developed with these underlying assumptions:

1. that mental health concepts, techniques, and practices enrich and facilitate the operation and acceptance of public health programs and enhance the effectiveness of public health workers;
2. that mental health considerations should be an essential aspect of the training programs provided by schools of public health; and
3. that in view of the magnitude of mental health problems and of the concerns of public health with the overall health of communities and populations, schools of public health are also appropriate educational settings for the development of mental health specialists.

This book is an attempt to examine the development of Mental Health Training Programs in Schools of Public Health. It is based upon findings of a research project in which questionnaires were mailed to all 1961-1967 American citizen graduates of Schools of Public Health.

The first four chapters provide an excellent overview of the relationship between mental health and public health. These chapters also provide a valuable review of the development of schools of public health.

The remainder of the book is a straightforward presentation of the results of the study. The material is interesting and the data extensive, but the authors have organized their presentation in a pedestrian manner and rarely comment on the significance of their findings. Out of a total of 4,459 questionnaires mailed, there were 3,115 usable responses. Only 1.9% of all graduates had majored in mental health related areas. Only 2.2% of all graduates were working in mental health fields. Because of the limited numbers of graduates who specialized in mental health or who were working in the field, most of the data is concerned with the relevance of mental health education for other public health graduates. Most respondents identified their major role responsibilities as executive-administrative; this was followed by consultative roles. About two-thirds of all respondents considered mental health training to be of value in public health work, but most of them also responded that their own current work only occasionally related to mental health concerns. This seeming paradox is unexplored.

The data are analyzed in a variety of ways: by age, sex, geographic distribution, professional role, school attended, etc. There is, however, no pulling together of the data to indicate whether there are consistent patterns that can be discerned, nor is there any attempt to manipulate the data to discover inter-relationships (for example, consistent age, sex, and role differences were repeatedly noted; the authors could have done some more elegant statistical work to have explored the extent that these findings were related to the fact that women in the sample were generally older than men and were most often engaged in either public health nursing or health education).

The authors present evidence that the Schools of Public Health present mental health material reasonably well; that students accept the interrelationship between mental health and public health concepts. They also present information that students see their training in mental health as being of limited use to them professionally. This material almost demands some comment, some pulling together of the material for attempted discussion and understanding. The authors present the pieces of data and let them just lay about.

The authors identify most graduates of schools of public health (regardless of subject major) as going into executive-administrative positions or consultative positions. They do not identify how curriculum prepares students in mental health programs for roles as mental health administrators and consultants. Upon reading this volume, this reviewer wondered whether mental health epidemiology, mental health education and mental health administration, etc. ought not be parts of ongoing programs in epidemiology, health education, health care and administration, and whether the primary function of a mental health section ought not be the education of all public health specialists in mental health concepts and practice (e.g. stress and human adaption; the prevalence of emotional disorder, its interrelationship with medical and social distress, interpersonal aspects of organizational behavior, etc.).

The volume is rich in background information. Its data are under-utilized by the authors. Indeed, since indices to the text as well as to the many tables are lacking, the data are doomed to under-utilization by the reader as well. For those interested in curriculum development, in reams of information about students from the eleven schools studied, and thus information about the schools, and in a well done historical section on schools of public health and the relationship of public health to mental health, the book is of value. If the reader expects new ideas or novel approaches to old material, he will be disappointed.

Community Mental Health Centers Act of 1963; Public Act 88-164, Federal Register, May 6, 1964.

THE BATTLE AGAINST HEART DISEASE. P. E. Baldry, Cambridge University Press. 1971. 189 pp. with illustrations. $10.90.

Reviewed by: LOUIS H. NAHUM

This book describes in historical sequence the progress in understanding the heart's action, the diagnosis of its disorders and their treatment from the time of Hippocrates to the present day. At the start, simple up-to-date account of the structure and function of the heart is given for the information of the general reader.

The development of our knowledge about diseases affecting the heart is well considered. Congenital heart disease is explained in simple terms and "hole in the heart" and "blue babies" are made clear.

The invention and use of the stethoscope, application of electricity to the diagnosis of heart disease and steps which led to discovery of important drugs used in treatment are presented.

The final chapter describes progress in surgery during the past 40 years and ends with a discussion of the technique and ethics of heart transplantation.

The book is written primarily for the general reader but is certainly of interest to journalists, science writers and even the medical profession.

Dr. Baldry has a feeling for medical history that emerges clearly from his writing. The characters move through the pages with depth and reality. It gives an opportunity to view recent advances against the back cloth of past discoveries.

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Preventable Smoking Deaths

(*Lancet* I:201, January 22, 1972.) The publication, *Smoking and Health Now,* by the Royal College of Physicians stated that about 20,000 men between the ages of 35-64 die each year as a result of smoking. The proportion of doctors who smoked cigarettes had fallen from 43-21 percent between 1951 and 1966.

As a result, there has been an overall reduction of 10 percent in the mortality rate from the major diseases related to cigarette smoking in doctors age 35-64 compared with an increase of 7 percent in the mortality of all men in England and Wales of the same age group.

This change in death rate represents the prevention of premature deaths of about 80 doctors each year—the equivalent of the output of one medical school.

Among the general population 6,000 men of working years die each year because they smoke more than their doctors. If they would stop smoking altogether at least 20,000 lives in this age group might be saved each year and much illness prevented.

Ascorbic Acid, Cell Proliferation And Cancer

(*Lancet* I, 542, March 4, 1972, Cameron, E. and Rotinan, D.) These authors suggest an important physiological function of ascorbic acid is to act as an inhibitor of hyaluronidase (PHI). In dietary deficiency of ascorbic acid the serum PHI level would gradually fall. This would allow progressive enzymatic depolymerization of inter-cellular material to continue unchecked leading eventually to the widespread pathological changes of tissue disruption and disintegration that we might recognize as scurvy.

If this is true and if it is also accepted that many varieties of cellular proliferation including some forms of neoplastic proliferation depend on the release of hyaluronidase then it follows that ascorbic acid might be a valuable remedy in the suppression of many cell proliferative disorders including cancer.

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Community Housecall

Two doctors walk into the Lonergan Building on Main Street in Willimantic, Connecticut once a month to spend their lunch hour together. They are greeted by a friendly host who seats them at a regularly reserved table in a small room. Their order for the day has been telephoned by an efficient secretary. Here they are completely removed from the roar of downtown rush hour traffic. But they are not really alone. Their host sits down with them before a microphone. He is an announcer at Radio Station WILI. This is a housecall on the community.

Your Doctor Speaks is an open-line radio program which permits listeners to telephone questions which are answered on the air. It is presented on a daily talk-show, *Sound Off*, which has a large lunch hour audience. Listeners can be imagined sitting at their kitchen tables for sandwiches and soup and the news at noon or in booths at the small restaurants along Main Street where background entertainment is often the news and opinions aired on the local radio station.

All Windham County physicians receive letters requesting them to submit a topic and a time to appear on *Your Doctor Speaks*. From their replies, which are usually written within a week, a schedule for the year is arranged and sent to the program director at WILI. Physicians' symptoms of reluctance to participate for the first time are alleviated by the assurance of the monthly presence of an experienced physician-moderator. Young Dr. Will Ellzey, besides having theatrical ability, has an extroverted personality which has reached out into the community. He is house-physician at the teachers' college, medical examiner for the town, member of the school board, coach of midget football. Each time he and the other physician-star face the microphone they broaden their knowledge of both communication and community.

Sometimes doctors choose a subject as broad as their specialty—"Orthopedics," "Ophthalmology," "Psychiatry." Sometimes they narrow it to a subject which is of current interest in Willimantic. "Drugs" was discussed by a young physician active in establishing a downtown treatment center. "Immunization of the Infant" was directed to the new Puerto Rican citizens by a pediatrician from another country. "Emergency Room Care" was explained by a doctor recently charged with responsibility for that facility at Windham Community Memorial Hospital. There were requests to repeat "National Health Insurance" presented by a physcian who had attended enough committee meetings to become an authority on that subject. "Maintenance of Health" was discussed sympathetically by a family doctor who answered questions on arthritis, yoga, vitamin c, the pill, acupuncture. There is an attempt to schedule timely subjects. "Athletic Injuries" in September when stay-at-home mothers are worried about their off-to-school helmeted sons. "Heart Disease" in February during the national fund drive. "Low Back Problems" during January snow-shovelling.

Your Doctor Speaks was an idea of a Medical Auxiliary member who believes that, though polls rate physicians as the "most respected" citizens, they are not appreciated by the community. Townspeople observe luxurious offices, new cars, big bills after small visits, and berate their doctor and the present medical system. But physicians' wives are proud of their hardworking husbands. They know that concern for people is the incentive for choosing a medical career. A homely philosopher of *Green Pastures* said in explaining his joy, "You gotta have a *Glory*." The Glory of a physician is his love of humanity. This Glory is demonstrated in *Your Doctor Speaks.*

The Connecticut State Medical Society offers placement assistance through the Physicians Placement Service, 160 St. Ronan Street, New Haven, Connecticut, 06511. This service is for the use of physicians seeking locations, as well as physicians seeking associates, and is without charge.

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The first page should list title, the author (or authors), degrees, hospital positions and any institutional or other credits. References should conform to the usual style of the JOURNAL. The following minimum data should be typed double spaced: names and initials of all authors, complete title of the article cited, name of journal, volume number, first and last page numbers, and year of publication. All references must be cited in the text. They should be arranged according to the order of citation, and not alphabetically. All references must be numbered consecutively. The number should be limited to the absolute minimum. Personal communications and unpublished data should not be included.

LENGTH OF ARTICLES

Ordinary articles should not exceed 2,500 words (approximately 3 printed pages). Under exceptional circumstances only will articles of more than 4,000 words be published.

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Illustrations should be numbered consecutively and indicated in the text. The number, indication of the top, and the author's name should be attached to the back of each illustration. Legend should be typed, numbered, and attached to each illustration as well as typed on a separate sheet. Photographs should be clear and distinct; drawings should be made in black ink (preferably India ink) on white paper. For half tones, glossy photographs should be submitted. CONNECTICUT MEDICINE will pay the cost of printing two cuts accompanying manuscripts submitted for publication. The cost of printing more than two cuts must be paid for by the author.

DEADLINES

Material other than original articles should be received not later than the 10th of the month PRECEDING date of issue.

LETTERS-TO-THE-EDITOR, NEWS

The Editor welcomes and will consider for publication letters containing information of interest to Connecticut physicians, or presenting constructive comment. Letters intended for publication should be marked "for publication." We shall be glad to know the name of the sender in every instance.

News items and *marked* copies of newspapers containing matters of interest to physicians are also welcome.

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Connecticut Medicine

Connecticut State Medical Journal

Volume 36/December 1972/Number 12

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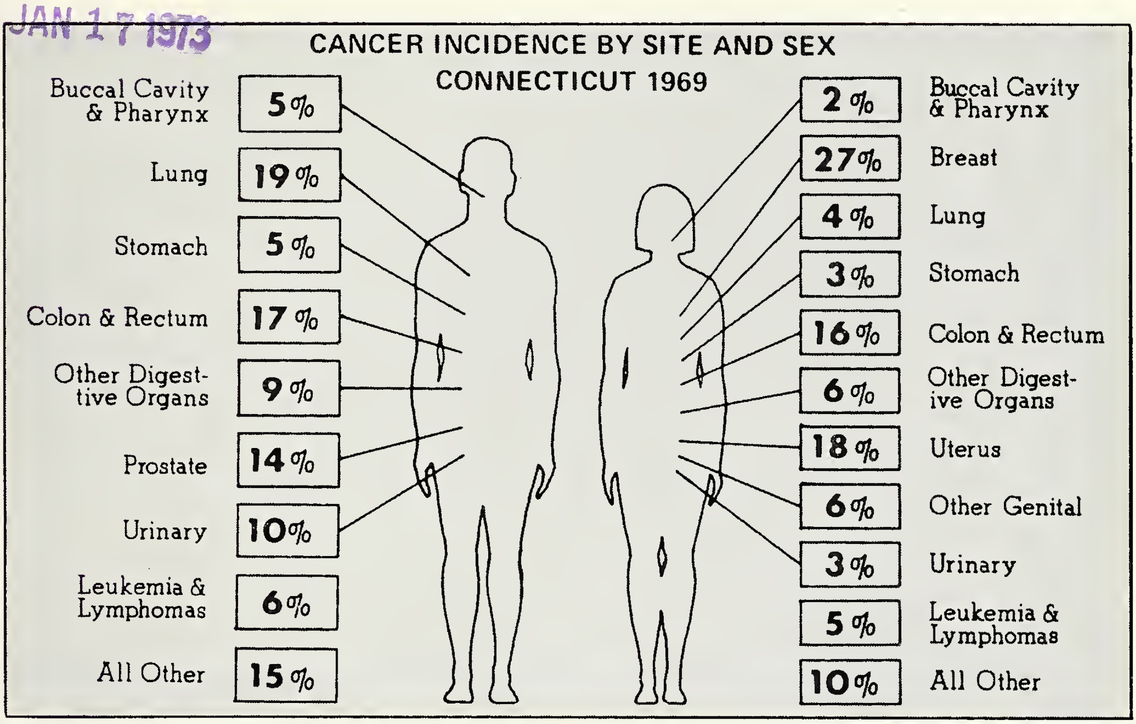
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Connecticut Medicine

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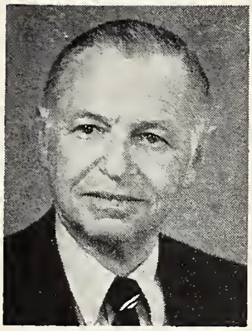
THE PRESIDENT'S PAGE



We have had dinned into us over and over again that this country is in a health care crisis of such proportions as to call for revolutionary changes in the health care delivery system. There are indeed areas where health care is sadly lacking, but this does not call, necessarily, for a total revolution in the delivery system. One of the lacks has been an adequate supply of physicians, and a solution to this lack has taken the form of training physician's assistants. In the words of President Nixon, "One of the most promising ways to expand the supply of medical care and to reduce its costs is through a greater use of allied health personnel, especially those who work as physician's and dentist's assistants." In his Health Message of Feb. 18, 1971, the President called for the expenditure of $15 million for the training of physician's assistants. More than $6 million in federal contracts and grants have been awarded to universities, medical schools and health care institutions in twenty-six states during the first year of a new Bureau of Health Manpower Education program, to train physician's assistants, for primary care. At the time of the writing of "The Physician's Assistant" by Sadler, Sadler and Bliss in 1972, only two hundred such assistants had been graduated, but under the new federally sponsored programs there are more than fourteen hundred enrolled students. The whole concept of improving health care by means of this innovation has been universally approved by politicians, the public, and even by organized medicine. There have been slight rumblings here and there, for example, by the nursing profession, which views the physician's assistant as a possible threat. But with the tendency to overreact which characterizes this country, the physician's assistant is being welcomed with open arms. Let us consider some logistic aspects. With curricular speed-ups, enlargement of classes, and the building of new medical schools, it has been predicted that by 1980 there will be a sufficient number of physicians in this country to deliver adequate medical care to the entire population. The increased rate of production of physicians will, in other words, close the shortage gap in seven years, so that unless the brakes are applied at that time, physicians will then be produced in numbers greater than needed. In the interim, physician's assistants will also be produced in increasing numbers, so that the result will be a still greater oversupply of health care personnel. That this will result in lowered costs of health care is probably true, if for no other reason than the old economic truism that an oversupply in the labor market tends to lower wages, by having a large pool of unemployed eager for a job. I doubt that this is a situation for which we should strive. Further, it remains to be seen whether or not physician's assistants will improve the quality of health care. However, with the head of steam already built up, it is questionable whether any slowdown could even be thought of, but it would appear that once more the hysterical need to do *something* may result in wasteful overreaction. The drive to recruit students into nursing and paramedical professions has already overproduced in Connecticut, so that young graduates are unable to find positions in their chosen fields.

David A. Grendon, M.D.
President

Child-Resistant Medication Containers To Reduce Pediatric Drug Poisonings

Arthur G. Lipman, Pharm.D.

During 1970, 23,389 ingestions of overdoses of internal medications by children under five years of age were reported to the National Clearinghouse for Poison Control Centers. This figure represents 37.5 percent of all reported poisonings in the United States that year. The Clearinghouse points out that these data are not to be construed as the total number of ingestions occuring annually. Many children are treated by private physicians or hospitals not associated with poison control centers which report ingestions to the Clearinghouse.[1]

During the same twelve-month period, the Connecticut Department of Health received reports of 1,296 poisonings by internal medications which required hospital treatment. Seventy-six percent of the reported hospitalizations due to poisonings were drug related! Medication overdoses (not including narcotics or drug abuse cases) were implicated in approximately 50 fatalities.[2]

Recently there has been some success in reversing this tragic trend. In 1970, aspirin ingestions, as a percentage of all reports, showed a dramatic drop for children under five years of age and were thirty percent lower than in 1967. Adult (325 mg.) and unspecified type aspirin showed a small decrease. Baby aspirin (75 mg.) was mainly responsible for the precipitous fall. During the first six months of 1971, reports of aspirin ingestions were down another seven percent from the 1970 figures. Compared to 1965 when aspirin ingestions represented 25.8 percent of all reports, the percentage is down by about one-half.

The Clearinghouse credits the successful reduction in aspirin ingestions to voluntary industry limitations of the number of 75 mg. aspirin tablets to 36 in a bottle and to intensive campaigns to create and intensify public awareness of the potential danger. The pharmaceutical industry had also adopted voluntary safety packaging in 1970 prior to the publication of the National Poison Prevention Packaging Act. This act requires that all medications containing salicylates in whole or part and medications containing controlled substances (narcotics, amphetamines, barbiturates, etc.) be packaged in child-resistant containers later this year. (Implementation dates discussed below.)

Thus federal legislation will require child-resistant packaging of two categories of drugs which account for about 16 percent of all reported ingestions by children under five years of age. But the drugs which account for the other 84 percent of pediatric drug poisonings will be legally available for sale in containers which most two year olds can open in seconds.

Child-Resistant Containers

A major reduction of this massive public health problem could be realized if all appropriate prescription medications were dispensed in child-resistant medication containers and if physicians and pharmacists would strongly urge all patients to purchase non-prescription medications in such packages whenever they are available. Many Connecticut pharmacists are now obtaining these containers for dispensing prescription drugs.

Initial FDA standards for child-resistant containers describe packages that will resist the efforts of 65 percent of children between 42 and 52 months and 50 percent of such children after a demonstration of how to open the container. With the response of the packaging industry to the new federal legislation, these standards will most probably be raised. The original FDA report stated that the containers should also be capable of being opened by 90 percent of adults 45 years old or younger.[5]

There are now several types of child-resistant containers available for both oral solid and oral liquid medications.(Appendix) One of the early type containers which claimed to have a safety cap was the plastic snap off or friction lid. These containers do not significantly impede youngsters from getting

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DR. ARTHUR G. LIPMAN, Drug Information Director, Department of Pharmacy Services, Yale-New Haven Hospital; Lecturer, Yale University School of Medicine, New Haven, Conn.; Assistant Clinical Professor, University of Connecticut School of Pharmacy, Storrs, Conn.

into the medications[3] and should not be considered child-resistant.

The single unit or unit dose package has proven to be one of the most effective packages in preventing young children from ingesting significant amounts of medication which is so packaged. The limited attention span of young children in the prime poisoning age group (two to six) precludes their opening more than a few single dose packages to gain access to the drugs.[4] These packages may also have some merit in slowing down a potential suicide victim in his efforts to ingest large quantities of medication so that he loses his compulsion before gaining access to a lethal dose.

The major objection to unit dose or strip packaged medications for many drugs is that such packaging is bulky and requires larger storage areas both for the pharmacist and the patient. Some strip packaged drug containers do not fit into many standard home medicine cabinets.

Other types of closures having plastic plugs which fit flush itno the neck of the medication container and require a "key" to remove, or which utilize a plastic tab which must be flipped up to open the container, have not gained wide acceptance due to difficulty in opening.

Patient Acceptance

The most widely accepted form of child-resistant container available today from several manufacturers requires simultaneous pressing and turning action to remove the cap. Most children under age six do not have the muscular coordination to perform both motions simultaneously. Thus, the "press and turn" type container provides effective child resistance and is easily opened by most adults. The first such containers available had light plastic caps which some children could remove with their teeth. The caps were modified to minimize this occurance. In a 29 month study in which 660,000 child resistant containers were used to dispense all prescription tablets and capsules to a patient population of 100,000, poisoning rates were 89 percent lower than before the study.[7]

Safety closures for oral liquid preparations employ the press and turn principle, a racheted outer cap which must be aligned with the undercap prior to opening, or a collar which slips over the bottle cap and must be pressed down to gain access to the conventional screw cap.

Child-Resistant Containers for all Homes

A commonly asked question is whether patients who do not have young children at home should receive their medications in child-resistant containers. The answer is an emphatic yes. A curious visiting toddler isn't fussy about whose medications he'll try.

At Yale-New Haven Hospital, child-resistant containers have been used for outpatient prescriptions since March 1971. This experience has shown that there are very few medications for which child-resistant containers are inappropriate. These include nitroglycerin tablets for which glass vials are required due to chemical instability and which patients may require in an emergency when they might not be able to open a child-resistant container.

Patients with severe arthritis of the hands may have difficulty opening the containers due to limited manual dexterity. Most arthritic patients have had little or no trouble with the containers at the Yale-New Haven hospital pharmacy, however. Neurological disorders such as Parkinson's Disease do prevent some patients from being able to open child-resistant containers.

Legal Requirements

In January, 1972 the General Laws Committee of the Connecticut General Assembly held a hearing on a proposed safety container bill. This bill would empower the State Commissioner of Consumer Protection to promulgate regulations requiring that pharmacists dispense certain medications in child-resistant containers. This legislation has received the support and endorsement of the Connecticut Pharmaceutical Association, the Connecticut Society of Hospital Pharmacists, the Secretary of the State and the Commissioner of Consumer Protection.

Federal legislation requiring child-resistant packaging of products containing salicylates, liquid furniture polishes containing petroleum distillates and substances subject to the Comprehensive Drug Abuse Prevention and Control Act of 1970 will be implemented during the next year.

On February 16, 1972, the FDA announced that effective August 15, 1972, safety closures will be required on all dispensing containers used in filling prescriptions that call for a product in which aspirin is an ingredient. Manufacturers must then package aspirin containing over the counter products in child-resistant packages, also. One package size of each aspirin product will be distributed in conventional containers for those patients who cannot operate safety closures.

On April 27, 1972 the FDA announced in the *Federal Register* that as of October 24, child-resistant containers must be used by pharmacists and physicians dispensing all preparations consisting in whole or part of any substance subject to control under the Controlled Substances Act.

The FDA has determined that controlled substances present a significant hazard to children by reason of their packaging and that child-resistant packaging is required to protect children from potential ingestion of all dosage forms including oral, suppository and parental forms.

The FDA has further stated that . . . "it is the manufacturer's responsibility to determine whether or not he should package bulk shipments of pharmaceuticals, unit packages or physician samples in child-resistant containers. However, the responsibility for repackaging prescribed drugs in accordance with these regulations rests with the pharmacist or physician dispensing these preparations at the pharmacy or patient level."

Pharmacists must dispense the drug in a container with a standard closure on request of the prescribing physician or the patient.

Conclusion

Many concerned physicians now indicate on their prescription blanks their preference for child-resistant containers. Wording such as "Dispense in child-resistant containers" may be printed on the prescription blanks or a check-off box may be labelled "Dispense in child-resistant containers unless checked."

The added cost to the pharmacist for a child-resistant container over a conventional counter is just pennies. Many pharmacists will absorb this cost, but even if passed on to the patient it won't exceed a nickel. Only the more commonly used package sizes are now available with child-resistant closures. Additional sizes and types will probably become available after August when the first Federal requirements go into effect.

A brief explanation to your patients of the reasons for using child-resistant containers and the ordering of these containers for prescription medications is an effective, inexpensive and patient accepted method for reducing the potential for pediatric drug poisonings.

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9. *Federal Register,* April 27, 1972.

Appendix

Some cild-resistant medication containers now available:

Type	*Distributor*	*Suitable Dosage Forms*
press and turn type—		
Palm and Turn	Kerr	solids and liquids
Screw Lock	Owens-Illinois	solids
Insert type—		
safety plug	Plastic Container Corp.	solids
overcap type—		
SafeRx Cap	Brockway	solids and liquids
Clutch Cap	Lumelite	solids and liquids
collar type—		
Safti Collar	Owens-Illinois	liquids

Cancer of The Cervix in Connecticut

Barbara W. Christine, M.D., M.P.H., Martha F. Chapple, A.B., M.P.H.
and Dorothea Nadeau, R.N.

Background

In 1949 the crude death rate for tumors of all female genital organs in Connecticut women was 33.1 per 100,000 and by 1963 it had dropped to 22.9. In those same years the mortality rate for cancer of the cervix for the state declined from a crude rate of 8.8 per 100,000 population to 4.9. Less of a decline was noted for cancer of the uterine corpus (including uterus not otherwise specified) which fell from 9.8 per 100,000 in 1949 to 6.2 in 1963.

Contrary to mortality, however, the incidence figures for cancer of the female genital system showed a rising trend from a crude rate of 66.7 in 1949 to 70.7 in 1963. Very little of this change occurred in the rates for corpus (including uterus not otherwise specified) and there was a slight decrease in the rates for ovarian cancer. The major change was because of increased rates of cervical cancer. This increase occurred solely in the rates for carcinoma in situ; the invasive rates decreased sharply from 1949 to 1963, and have not changed much since then. (Figure 1.)

It was felt that the increased use of the Papanicolaou smear beginning about 1950 undoubtedly had contributed to detection of cervical cancer in Connecticut women in its early curable stages, in situ and localized, and that increasing public and professional education might, over the years, have brought more women to the physician for Papanicolaou testing.

However it should be noted that mortality had begun to decline even before widespread use of the Papanicolaou test. It can be postulated that various factors might have led to earlier detection even without the Papanicolaou test—better medical care available to larger segments of the population, increased use of obstetricians for deliveries, and thus better pre-natal and postpartum care, better attention to factors associated with incidence, educational campaigns emphasizing the need for routine gynecologic or physical examinations; and that after 1950 the use of the Papanicolaou test was added to these factors for substantially greater improvement in early detection and thus even further declines in mortality.

It was decided to seek to determine the factors which may have contributed to the decline in cervical cancer mortality in Connecticut. A three-stage study was undertaken to investigate some of the factors which would provide clues to the situation.

I. A study of the relationship between incidence and socioeconomic status in seven metropolitan areas of Connecticut, 1959 to 1964.
II.a. An analysis of changing patterns in the use of Papanicolaou tests in Connecticut for the years 1950 to 1967.
b. Identification of reasons women visited their physicians for diagnosis, during the years 1959 to 1964, including the part that Papanicolaou tests played in diagnosis.
III. An investigation of three metropolitan areas with high, medium and low cervical cancer incidence rates with regard to differences in demographic and epidemiological factors, health education and patterns in medical care.

I. The Relationship of Incidence to Socioeconomic Status

If it could be shown that incidence of cervical cancer was higher in women of low socioeconomic status, it could be postulated that future improvement of hygienic and medical care for women in such groups would lead to even greater decrease in mortality rates in future years. Seven metropolitan areas of Connecticut were chosen for study. Comparisons were made between these metropolitan areas and the semi-rural areas of the state. Differences in rates by socioeconomic level between each of the seven

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DR. BARBARA W. CHRISTINE, Chief, Chronic Disease Control Section, Connecticut State Department of Health, Hartford, Conn.; MARTHA F. CHAPPLE, A.B., M.P.H., and DOROTHEA NADEAU, R.N., former project coordinators, Chronic Disease Control Section, Connecticut State Department of Health, Hartford, Conn.

This study was supported by Public Health Service Project Grant No. 13976-03-69 from the National Cancer Institute. Grant No. 13976-03-69 from the National Cancer Institute and a grant from the American Cancer Society, Connecticut Branch.

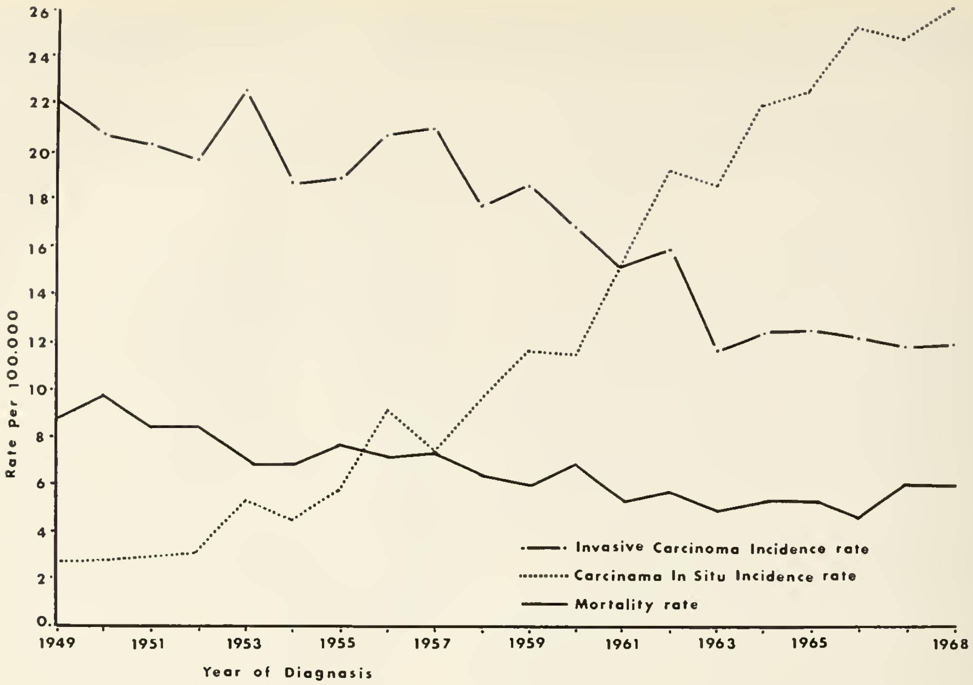

Figure 1

Crude incidence and mortality rates per 100,000 females for carcinoma of the cervix, Connecticut 1949-1968.

metropolitan areas were also investigated. This study is reported on in a separate paper.

II.a. Changing Patterns in the Use of Papanicolaou Tests in Connecticut, 1950 to 1967

The use of cytology was investigated by taking a 20% sample from records of Connecticut laboratories for selected years: 1950, 1955, 1960, 1965 and 1967 to determine the ages of women having Papanicolaou tests (Table 1a.). The most striking fact uncovered was the tremendous increase in the use of the Papanicolaou test, from under 4,000 in 1950 when only one laboratory was operating, to approximately 250,000 annually in 1967. The sampling revealed that until 1960 about 30% of women receiving Papanicolaou tests were in the 30-39 age group; 27% were age 40-49, and women aged 20-29 comprised under 20% of the sample. By 1967, the largest portion of women having Papanicolaou tests had shifted to the younger women—those in the 20 to 29 age group, 33% and 57.6% of the women were under 40 years of age.

An attempt was made to estimate the proportion of women in different age groups of the population who were tested (Table 1b.). It was estimated that in 1960 only 10% to 15% of the women in each ten year age group under age 50 had a Papanicolaou test during the year, less than 10% of those 50 to 59, and less than 5% of those over sixty. This changed somewhat for the better by 1965. In that year while the age specific rates for invasive cervical cancer rose from 12.0 per 100,000 for women aged 30-39 to 24.7 for those 40-49 (Table 1c.) the percentage of women receiving Papanicolaou tests de-

TABLE 1A

USE OF PAP TESTS IN CONNECTICUT, SELECTED YEARS, 1950-1967

Total Number Paps	*Year*	*Number of Laboratories Reporting*	*Percentage Distribution of Known Ages, Per Sample*				
			20-29	*30-39*	*40-49*	*50-59*	*60+*
3,700	1950	1	19.5	26.4	26.3	15.4	12.4
10,600	1955	2	17.1	29.5	28.1	14.5	10.8
91,600	1960	30	18.1	30.9	27.2	13.8	9.9
210,736	1965	42	27.3	25.7	24.7	13.1	9.3
242,956	1967	41	33.0	24.6	21.8	12.4	8.1

clined from 29.7% to 27.3% for the two groups respectively. The invasive rates continued to rise to 29.9 for the 50 year olds and the estimated percent of women in that age group screened by Papanicolaou tests dropped to 17.5%. Age-specific mortality for 1965 (Table 1d.) showed the upward trend of death from invasive cancer from age 30 through 60+. Although the estimates for 1967 are not as reliable there was a marked increase in the proportion of women aged 20-29 receiving Papanicolaou tests, but no great change among those aged 30 to 49, and a marked drop in women aged 50-59.

The rise in the percent of 50 year olds screened from 9.5 in 1960 to 17.5 in 1965 may have reflected an increased public education program and physician emphasis on Papanicolaou testing also affecting the 20-49 age group. Its fall in 1967 may mean that public education and physician attention was then being directed toward younger women.

II.b. Reasons for Visit which lead to Diagnosis of Cervical Cancer

The population chosen for study was the 2,484 cases of cancer of the cervix reported to the Connecticut Tumor Registry as having been diagnosed in Connecticut residents during the six-year period 1959 to 1964. For each case, the Connecticut Tumor Registry record gave information on age, town of residence, date of diagnosis and stage of disease, which was used as the basis for the socioeconomic part of the study. An attempt was made to obtain information concerning symptoms, use of the Papanicolaou test and clinical findings at the time of diagnosis, by reviewing the tumor registry, the hospital record and through the excellent cooperation of physicians who answered questionnaires or permitted office visits. In this way, essentially complete histories on 1,077 cases were obtained.

In Table 2, striking differences can be seen in the reasons for the visit which led to the diagnosis. Forty-nine percent of the women later diagnosed with CIS visited the doctor for routine workup or non-gynecological complaint. Almost a quarter of the women with CIS were diagnosed during routine gynecological or physicial examinations; 9.2% more cases of CIS were found in connection with pregnancy visits, and another 15.6% came to the physician with a non-gynecological complaint. By way of contrast, less than 20% of the invasive cases were discovered on visits to a physician for a reason not related to a gynecological complaint. Of the women with localized and non-localized lesions, 80% and 86%, respectively, came because of a gynecological complaint.

TABLE 1B

ESTIMATED PERCENT OF CONNECTICUT WOMEN RECEIVING PAPS, 1960, 1965, 1967

	Age Groups				
Year	*20-29*	*30-39*	*40-49*	*50-59*	*60+*
1960	11.3	15.1	13.8	9.5	4.7
1965	30.8	29.7	27.3	17.5	9.1
1967	39.5	32.8	27.2	9.7	8.9

TABLE 1C

AGE SPECIFIC INCIDENCE RATES, CANCER OF CERVIX, CONNECTICUT, 1965

	Age Group				
	20-29	*30-39*	*40-49*	*50-59*	*60+*
C.I.S. Rate	35.9	68.5	46.8	17.8	7.5
Invasive Rate	3.8	12.0	24.7	29.9	26.7
Total Rate	39.7	80.5	71.5	47.7	34.2

TABLE 1D

AGE SPECIFIC MORTALITY RATES, CANCER OF CERVIX, CONNECTICUT, 1965

	Age Group				
	20-29	*30-39*	*40-49*	*50-59*	*60+*
Mortality Rate	–	4.9	6.8	10.2	18.3

TABLE 2

REASON FOR VISIT WHICH LED TO DIAGNOSIS OF CERVICAL CANCER, BY AGE AND STAGE CONNECTICUT, 1959-1964

Age	*Stage*	*Gyn Complaint*		*Routine Gyn exam*		*Routine physical exam*		*In connection with pregnancy or postpartum*		*Non-gyn complaint*		*Total known*	
		No.	*%*	*No.*	*%*	*No.*	*%*	*No.*	*%*	*No.*	*%*	*No.*	*%*
Less than 40	CIS	154	51.3	50	16.7	21	7.0	46	15.3	29	9.7	300	100
	Local	40	68.9	1	1.7	4	6.9	5	8.6	8	13.8	58	100
	Non-local	30	85.7	0	0	0	0	3	8.6	2	5.7	35	100
	Total age <40	224	57.0	51	13.0	25	6.4	54	13.7	39	9.9	393	100
40-49	CIS	79	54.8	17	11.8	16	11.1	2	1.3	30	20.8	144	100
	Local	56	75.7	4	5.4	6	8.1	2	2.7	6	8.1	74	100
	Non-local	54	90.0	1	1.7	1	1.7	0	0	4	6.7	60	100
	Total age 40-49	189	68.2	22	7.9	23	8.3	4	1.4	40	14.4	278	100
50+	CIS	30	40.0	7	9.3	16	21.3	0	0	22	29.3	75	100
	Local	100	88.4	0	0	3	2.7	0	0	10	8.8	113	100
	Non-local	126	83.4	1	0.1	2	1.3	0	0	22	14.5	151	100
	Total age 50+	256	75.5	8	2.4	21	6.2	0	0	54	15.9	339	100
	All ages—CIS	263	50.7	74	14.2	53	10.2	48	9.2	81	15.6	519	100
	Local	196	80.3	5	2.0	13	5.3	7	2.9	24	9.8	244	100
	Non-local	246	86.0	2	0.8	3	1.2	3	1.2	28	11.5	246	100
	All ages, all stages	668	66.1	81	8.0	69	6.8	58	5.7	133	13.1	1010*	100

* 67 of the 1077 cases studied did not give sufficient information on the questions to be included.

Symptoms at the time of diagnosis

Non-menstrual bleeding was the leading complaint which caused women with gynecological symptoms to seek medical assistance. This occurred in only 24% of the CIS cases, but in over 70% of the invasive cases. Menstrual irregularities ranked second as the cause of visit to the physician, regardless of stage of disease at the time of diagnosis.

Use of the Papanicolaou test in bringing women to diagnosis

In many instances, the Papanicolaou test is used to confirm clinical suspicion of cervical pathology. However, in not a few instances the Papanicolaou test is the sole reason for bringing women to diagnosis. Of the 629 women who had Class III to V Papanicolaou tests, 248 (39%), had no gynecological symptoms preceding the diagnosis, and 64 of these showed no cervical pathology clinically. Thus 64 out of the 629, about 10%, would have gone undetected without a Papanicolaou test.

III. An Investigation of Three Metropolitan Areas with High, Medium, and Low Cervical Cancer Incidence Rates

Three cities which will hereafter be designated as A, E, and G, were chosen for study because they had high, medium, and low incidence rates of cervical cancer respectively. (Table 3.). Mortality for the cities in 1960 essentially followed the incidence pattern with a crude rate of 16.2 for City A, 8.6 for City E and 7.2 per 100,000 population for City G.

The three city investigation was carried out by two nurse investigators working under the direction of a public health pysician. Before beginning a city survey the physician and a nurse visited the local health director, explained that variations in cervical cancer incidence rates had been found in the state and that they were interested in examining several cities for possible etiological factors as well as from the standpoint of early cancer detection, medical facilities, and health education. Each health director introduced the investigator to key staff members in service and health agencies throughout the city. Health administrators and pathologists were approached for permission to survey practices in their institutions and laboratories. Voluntary health agencies such as the Cancer Society and Planned Parenthood were contacted both at the state and local levels. From the agencies, hospitals, and private laboratories the investigators gathered information for recent years on the number of Papanicolaou examinations performed annually, the age groups covered, the percent taken by each type of specialist, the use of screening programs in the community, clinic and medical care coverage of low socioeconomic areas, and educational programs for the public and medical personnel.

TABLE 3

AGE STANDARDIZED INCIDENCE RATES[1] OF CERVICAL CANCER IN THREE METROPOLITAN AREAS, CONNECTICUT, 1959-1964

City	*Total Incidence Rate*	*In Situ Rate*	*Invasive Rate*[2]
A	4.70[3]	2.57	2.12
E	2.94	1.60	1.34
G	1.83	0.85	0.98

[1] Females aged 15 years and over per 1000 female population.

[2] Invasive rate contains localized, regional and remote tumors.

[3] Due to rounding the total rates will not always equal the sum of the in situ and invasive rates.

Although it had been expected to obtain trends for the years 1959-1969, little information was available for the early years and, therefore, the investigation was for the most part confined to the late 1960's. Wherever possible indications of changes in trends over the decade were also studied.

In 1969 City A, that with the highest rate of cervical cancer for 1959-1964, had the largest population of the three cities, the highest population density, and the greatest proportion of its work force, 46%, engaged in manufacturing while City G had 37.8% and City E 25.8% (Table 4.). Cities A and E resembled one another in the distribution of workers in printing occupations while Cities A and G had approximately the same number of individuals employed in the manufacturing of metals. All three cities served as shopping centers for surrounding communities and they resembled one another in altitude, topography, average rain fall, and temperature. There were 2.1 physicians for 1,000 population in City A, 1.5 in E, and 1.3 in City G. City G had more hospital beds available per 1,000 population, 7.4 in 1969, than Cities A and E with 6.4 and 6.3 respectively. Nonagricultural average weekly wages were highest for City A, lowest for City E.

Of the three cities, City A had the largest proportions of Negroes and Puerto Ricans, high risk groups for cancer of the cervix[1], in the 1960 census enumeration, 9.8% and 3.7% of its population respectively. The difference between that city and the other two in this respect was highly significant statistically. Cities E and G closely resembled one another with 7.8% Negroes and 0.6% Puerto Ricans in City E and 6.6% and 0.9% respectively in City G.

Investigators such as Anderson and Gunn have reported cervical cancer rates among venereal disease patients are among the highest known.[2] Table 5 gives the number of cases of syphilis and gonorrhea for the three study cities as reported to the Connecticut State Department of Health in the years 1960 and 1969 together with the case rates per 100,000 population. In 1960 the rate for gonorrhea was highest in City A as was that for cancer of the cervix. And, as it did for cervical cancer, City G ranked third in rate of gonorrhea. Although City A also had the highest rate of syphilis in 1960, Cities E and G did not rank as they had for cancer of the cervix. City A had the highest rate for syphilis again for 1969 but City G ranked first for gonorrhea. In that year the rates for syphilis rather than gonorrhea assumed the order shown for cervical cancer in the early 1960's. In 1960 and 1969 the rates for both Cities A and E exceeded the average of the state as a whole.

It had been expected that the investigation would identify differences in health care procedures from city to city because of their differences in cervical cancer rates. However, it was immediately evident

TABLE 4

COMPARISON OF THREE CONNECTICUT CITIES

1969

		City	
Characteristic	*City A*	*City E*	*City G*
Population	153,800	76,300	109,400
Percent Negro (1960)	9.8%	7.8%	6.6%
Percent Puerto Rican (1960)	3.7%	0.6%	0.9%
Working Force in Manufacturing	70,770 (46.0%)	19,720 (25.8%)	41,330 (37.8%)
Printing	1,950 (12.7%)	1,290 (16.9%)	980 (9.0%)
Area	17.5 sq. miles	27.7 sq. miles	28.8 sq. miles
Population density	8789/sq. mile	2754/sq. mile	3799/sq. mile
Total Hosp. Beds	990	483	812
No. Hosp. Beds/1000 pop.	6.4	6.3	7.4
Physicians with local offices	319	117	140
No. Physicians/1000 pop.	2.1	1.5	1.3
Nonagricultural Avg. Weekly Wages	$145.09	$117.71	$125.10

TABLE 5

SYPHILIS AND GONORRHEA REPORTED MORBIDITY AND CASE RATES*

CONNECTICUT AND SELECTED CITIES

		1960		*1969*	
Area		*Syphilis*	*Gonorrhea*	*Syphilis*	*Gonorrhea*
City A.					
	Morbidity	81	221	102	476
	Case Rate	51.6	140.8	66.3	309.5
City E.					
	Morbidity	23	49	20	192
	Case Rate	33.8	71.9	26.2	251.6
City G.					
	Morbidity	45	58	12	344
	Case Rate	42.0	54.1	11.0	314.4
State of Connecticut					
	Morbidity	555	1563	605	5769
	Case Rate	21.8	61.4	20.0	191.2

* Rates per 100,000 population.

that, besides this, marked variations would be found within each city particularly from hospital to hospital.

Table 6 lists by hospital the percent of Papanicolaou smears submitted for laboratory examination by members of different specialties and the annual average number sent in by each specialist. In order to maintain the anonymity of the cities and to preserve the variability between institutions, the statistics are presented by hospital with no designation as to the city in which it is located.

The majority of Papanicolaou tests were submitted by obstetricians and gynecologists ranging from 72.6% from Hospital 1 to 46.4% of the total of Hospital 4. The general practitioners sent in from 2.8% to 22.4% of the Papanicolaou tests performed annually while general surgeons submitted from 2.4% to 10.1%. Hospital clinics, cancer screening programs, and family planning clinics accounted for 3.9% to 8.4% of Papanicolaou tests done by two of the hospitals.*

The obstetricians and gynecologists sent in an avergae of 500 specimens per specialist per year (483 to 631) except in Hospital 4 in which the rate was much lower, 275 annually. In each institution, except Hospital 3, internists ranked second in number of specimens submitted per specialist. In City A, a metropolitan area with a high rate of both in situ and invasive cervical cancer, Ob-Gyn specialists for the most part submitted a smaller percent of Papanicolaou tests while internists submitted a greater percent than in the cities with lower cervical cancer rates.

The only Papanicolaou tests available at no cost to the patients in any city studied appeared to be those carried out in screening programs funded by the Cancer Society and those involving the medically indigent attending Planned Parenthood clinics.

In order to determine the proportions of Papanicolaou tests being performed on women of different ages, a five percent sample was taken in two survey hospitals. As had been found for the early 1960's, the greatest proportion of Papanicolaou tests were being performed on the young adult women. Of the total examinations performed on women of known age 31.8% were on those 0-29 years old, 24.1% on the 40-49 year olds, and 21.2% on women 30-39. The high proportion on the 0-29 age group undoubtedly is a reflection of the large number of Papanicolaou tests taken in the pre and postpartum periods. Seventy-four to eighty-one percent of deliveries were found to have taken place in women of that age group. Only 15.5% of the Papanicolaou tests were performed on women 50-59 and 7.4% on women over the age of 60.

To determine the proportion of women in low socioeconomic areas (SRA IV and V) that were receiving Papanicolaou smears as compared to those in higher socioeconomic areas (SRA II) five percent samples of Papanicolaou tests examined in laboratories of City A and G were obtained for the year 1969. The residence of each woman as noted on the laboratory slip was used to determine the proper census tract and thus the socioeconomic area in which she belonged. In this way the total estimated number of Papanicolaou tests for each area was obtained. This number applied to the female population of that area was used to determine the approximate percent of women who received Papanicolaou tests in one year. Table 7 presents the rates of cervical cancers by Social Rank Area for the period 1959-1964 and the percent of women in these areas who received Papanicolaou test screening in 1969. It was found that in the higher socioeconomic areas (SRA II) in City A approximately twice as great a proportion of women received Papanicolaou tests as in City G. In the lowest socioeconomic areas (SRA V) the coverage of women by Papanicolaou tests in City A was three times greater. In both cities it was the high socioeconomic women, those shown to have the lowest rates of cervical cancer, in situ, and invasive in the early 1960's who were receiving Papanicolaou screening rather than the poor women, those of greater risk.

Figures for selected hospitals combined revealed that each year more deliveries have been performed by obstetricians, 83.6% of the total in 1968 and 87.3% in 1969 with decreasing numbers by house staff, general practitioners, and general surgeons. An extremely low and still decreasing number of subtotal hysterectomies was found. Vaginal hysterectomies made up 65% of the hysterectomies in one hospital, quite at variance with the other hospitals.

A comparison of clinics in all institutions for 1969-1970 revealed them to be alike in performing Papanicolaou tests on all new prenatal patients (Table 8.). Two hospitals carried out postpartum Papanicolaou tests as well. The use of Papanicolaou tests in gynecological clinics varied from "only at the discretion of the physician" to Papanicolaou tests on all women over the age of 35 years if none

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* Papanicolaou tests sent to other cities or out of state were not included in the figures.

TABLE 6

PERCENT AND AVERAGE NUMBER OF PAPS FOR SELECTED HOSPITALS BY TYPES OF SPECIALISTS AND CLINICS
CONNECTICUT, 1969

Specialist	*Hosp. 1*		*Hosp. 2*		*Hosp. 3*		*Hosp. 4*		*Hosp. 5*	
	% Total	*Average No.*	*% Total*	*Average No.*	*% Total*	*Average No.*	*% Total*	*Average No.*	*% Total*	*Average No.*
Obs. Gyns.	72.6	631.1	63.6	576.6	65.7	544.0	46.4	275.0	48.6	482.6
Gen. Surgeons	9.7	95.0	6.6	90.0	10.1	140.0	8.0	54.2	2.4	60.0
Internists	14.8	116.0	7.3	133.3	3.4	35.0	20.2	106.6	25.0	137.7
Gen. Practitioners	2.8	73.3	22.4	110.9	20.8	107.5	18.1	95.5	11.7	102.3
Clinics Ca. Soc. Screening	0	0	0	0	0	0	7.2	340.0	8.4	630.0
Family Planning Clinics	0	0	0	0	0	0	0	0	3.9	580.0
Total %	99.9		99.9		100.0		99.9		100.0	

had been performed in the past year. However, most of the gynecological clinics performed Papanicolaou tests on all new patients and repeated them every six months or every year if the woman was taking an oral contraceptive. Only one surgical clinic did Papanicolaou tests routinely and then only if the patient was to be admitted to the hospital. Another did them at the discretion of the physician and a third referred any woman with symptoms to gynecological clinic for a Papanicolaou.

Medical and surgical clinics in an institution did not always follow the same policy. In Hospital 5, no Papanicolaou tests were performed when the patient was being admitted from medical clinic although they were if she was admitted from surgical clinic. In Hospital 4, the medical clinic did Papanicolaou tests only on patients with symptoms while surgical clinics did no Papanicolaou tests whatsoever. In Hospital 1, both medical and surgical clinics referred women with symptoms to the gynecological clinic for Papanicolaou tests.

The clinics in all three cities were fairly accessible to persons from low socioeconomic areas. However, women who did not speak English would be able to communicate best in Hospitals 2 and 5. They would have difficulty in Hospital 1 which had no provisions for interpreters. When a clinic appointment was made Hospital 2 asked what language difficulty might be expected so that an interpreter would be available. No clinics were open in the evenings and only one, a medical clinic, on Saturday morning. Planned Parenthood clinics, where available, offered pelvic examinations and Papanicolaou tests on all patients. Women over the age of 35 and those with more than five children were asked to return in six months for repeat examination and Papanicolaou, others once per year. Planned Parenthood clinics were open evenings as well as during the daytime and interpreters were available.

The health departments and visiting nurse associations in all communities reported that they placed no particular emphasis on Papanicolaou screening or cervical cancer education during the 1960's. Pamphlets and literature available to the public on this subject were for the most part those produced and distributed by the Cancer Society.

Newspapers, radio, and television educational programs were generally prepared by the local Cancer Society or occasionally by the health department. Unlike Cities E and G, City A had a most active program for cervical cancer education and screening throughout the 1960's. Visiting Nurse Association's educational stress in all three cities was said to have been on the care of the baby and young child. Lectures which nursing associations sponsored covered such subjects as colostomies, childbearing, tuberculosis, medicare, and types of services available from the VNA's. Very little documented information was available to give a picture of the ongoing education of medical personnel in cervical cancer over the decade. One hospital in City A devoted from one to nine clinical pathological conferences per year to Papanicolaou screening and cervical cancer. This hospital brought in visiting physicians once or twice a year to lecture on cervical neoplasia and student nurses were routinely given eight hours of lecture on the subject.

Discussion

A few factors were identified which might account for higher rates of cervical cancer in City A than in Cities E and G. Although no responsible environmental factors were uncovered, City A which led with the higher rate of cervical cancer

TABLE 7

ESTIMATED AVERAGE PERCENT OF FEMALE POPULATION THAT RECEIVED PAPS, 1969, BY SOCIOECONOMIC LEVEL* AND AGE STANDARDIZED INCIDENCE RATES OF CERVICAL CANCER, 1959-1964

TWO CONNECTICUT CITIES

	City A				*City G*			
	Est. Avg. % Paps 1969	*Cervical Cancer Rates 1959-1964*			*Est. Avg. % Paps 1969*	*Cervical Cancer Rates 1959-1964*		
Social Rank Area		*Total*	*In Situ*	*Invasive*		*Total*	*In Situ*	*Invasive*
II	57.1	3.9	1.8	2.1	25.6	1.0	0.5	0.5
IV	28.8	6.1	2.9	3.2	16.2	2.2	1.1	1.2
V	32.2	5.6	3.4	2.2	10.7	2.1	0.4	1.7

* Per 5% sample.

TABLE 8

PAPS PER CLINIC IN FIVE CONNECTICUT HOSPITALS, 1969-1970

Type Clinic		*Hosp. 1*	*Hosp. 2*	*Hosp. 3*	*Hosp. 4*	*Hosp. 5*
Obs. —	Paps	On all New Pts.	All new prenat.	All initial	All new prenat. and postpartum	All new prenat. some postpartum
	Open	2 morn./wk.	1 morn./wk.	1 aft./wk.	1 morn. 1 aft./wk.	1 morn./wk.
Gyn —	Paps	All over 35 yr. if not had in one yr.	Discretion of physician	All on init. visit	All new, those on pill q. 6 mo.	All new and yearly esp. if on pill
	Open	1 morn./wk.	1 morn./wk.	1 aft./wk.	1 morn. 1 aft./wk.	1 morn./wk.
Surg. —	Paps	None Ref. to Gyn. if symptoms	Discretion of physician	None	None	None except on pts. to be admit.
	Open	2 morn./wk. 1 aft./wk.	3 aft./wk.	5 aft./wk.	2 aft./wk.	2 aft./wk.
Med. —	Paps	None Refer to Gyn. if symptoms	Unknown	None	If pt. has symptoms	None, even on pts. to be admit.
	Open	2 morn./wk.	2 morn./wk.	4 morn./wk.	1 morn./wk.	2 morn./wk. (one of these Sat.)
Tumor —	Paps	On pts. with symptoms	—	—	—	—
V.D. —	Paps	None	—	—	—	—
Interpreters —	Spanish	None Pt. must bring relative as interpreter	Sp. speak. soc. worker. Sp. personnel Apt. book notes language pt. speaks	Interpreter available	Nurses Aid interpreter	Nurses aide and clerk for prenat., surg. and med. clinics.

was found to lead in rate of venereal disease and proportion of Negroes and Puerto Ricans, epidemiological factors associated with high cervical cancer rates. However, the assumption of a relationship between venereal disease and cervical cancer must be approached with caution.

In City A internists were found to submit a greater percent of total Papanicolaou tests to hospital laboratories than in Cities E and G. Thus more older women might be covered by Papanicolaou screening in City A. Screening programs which would lead to greater detection of early lesions sponsored by the local Cancer Society, were more frequent in City A than the other cities from 1959 through 1969. A higher average pay rate and number of physicians per 1,000 residents in City A may have ensured slightly better medical coverage than that available to women of the other two cities. Both public and professional education on cervical cancer received greater emphasis in City A than in the other two communities during the 1960's.

Although the three cities did not vary greatly in the availability of clinic facilities for the low socioeconomic groups, with only one exception the clinics were not open at hours convenient for women with families or those who work. Except for the women seeking prenatal or family planning care, Papanicolaou tests were generally not available unless women had reached the stage of having symptoms of a tumor. No Papanicolaou tests were available free of charge except through Planned Parenthood clinics or Cancer Society screening programs. A 5% sample of Papanicolaou tests performed in two survey hospitals showed that in 1969 as in the early decade the greatest percent of tests were being carried out on young women of childbearing age.

Investigation as a Whole

The study revealed that mortality from cervical cancer in Connecticut had decreased at a time of increasing incidence for several reasons. Papanicolaou screening had increased steadily by physicians, clinics, and in community screening programs. In recent years greater numbers of women have been treated by specialists at time of pregnancy. Because of this more have undoubtedly received thorough pre and postpartum care. Women's gynecological complaints have been treated by more complete investigation. Educational programs dealing with cervical cancer, particularly those of the Cancer Society, have been increasingly directed towards Connecticut women and the medical profession in the past decade.

The study brought out that there were some factors in regard to the early detection and treatment of cervical cancer which were lacking in Connecticut. First were Papanicolaou screening and regular pelvic examinations for women past the childbearing years and those of all ages in low socioeconomic areas, the groups found to be at greatest risk in the state. Most medical facilities for cancer detection and health care were not available at convenient times for optimal utilization by working women and had no proper facilities for women with large families or language restrictions. And although the study brought out that Papanicolaou tests should not be limited to women with symptoms some gynecological, surgical, and medical clinics did not offer routine Papanicolaou tests. It was also found that the early detection of cancer and type of care a woman received might vary depending not only upon the city in which she resided but also upon the facility she utilized within that city.

Future

As a result of this study it is felt that screening by use of the Papanicolaou smear and concentrated public and professional education programs on cancer of the cervix have led to increased detection of these neoplasms in one Connecticut community as compared to other cities. It is therefore suggested that all Connecticut communities wage screening and educational campaigns to eliminate death due to cancer of the cervix. Several steps are suggested:

1. Education
    - a. Community based education programs both public and professional must be directed to the importance of regular Papanicolaou and pelvic exams for all adult women, emphasizing the older and low socioeconomic women not now being reached.
    - b. It would be well for obstetricians to educate young women to the importance of continuing to have regular pelvic Papanicolaou examinations after their childbearing years have ceased.
2. Screening facilities—Facilities for Papanicolaou screening must be made available to Connecticut women of every age and socieconomic level with emphasis on women forty years of age or over, those of low socioeconomic status, and those with diagnosis or history of venereal disease.
    - a. Consideration should be given to coopera-

tion of existing agencies such as Planned Parenthood, Cancer Society, and state and local health departments to provide pelvics and Papanicolaou tests for women after childbearing years and those of low socioeconomic status, hopefully utilizing facilities such as those already set up by Planned Parenthood. These facilities should be open weekend and evening hours for the convenience of working women and those who cannot leave families during the day.

   b. Programs should be set up for use of self administered Papanicolaou tests for women who will not or cannot visit clinic facilities.

3. Funds—Funds must be made available to cover the cost of a Papanicolaou and pelvic for every woman unable to bear the cost herself.
4. Physician mobilization—Physicians not now performing Papanicolaou tests to a great extent—general practitioners, internists, or surgeons should be stimulated to question their patients as to the date of last Papanicolaou and should perform one if there has not been one within the past year.
5. Identification cards—Wallet size identification cards could be issued to each woman in the state on which can be kept her record of the dates and findings of Papanicolaou examinations.

Summary

Cervical Cancer in Connecticut was studied according to availability and use of Papanicolaou testing, reasons which brought women to the physician for diagnosis and the relationship between incidence and socioeconomic status. A variation in cervical cancer rates was investigated in three metropolitan areas and possible etiologic factors were discussed.

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Current Concepts In Scoliosis

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Scoliosis, or lateral curvature of the spine, has challenged the physician since the beginning of medicine. The cause of many types of curvature is now known but the most common, idiopathic scoliosis, still defies definition. Studies conservatively estimate that approximately 6,000 new severe cases of scoliosis will occur annually in this country.[1]

Types of Scoliosis

Idiopathic scoliosis constitutes the largest group (72 percent). Though the cause is unknown there are many similar characteristics. It occurs predominately in girls (6 to 1 ratio), usually is convex to the right in the thoracic region, and the onset commonly precedes adolescence by several years. (Fig. I) Idiopathic scoliosis also tends to be familial but the precise genetic background has not been clearly outlined. The history of the majority of these curves is that of progression until skeletal maturity which occurs at age 15 to 16 in girls and somewhat later in boys. Proposed causes of idiopathic scoliosis include such diverse theories as abnormal biochemistry in the intervertebral tissues and alterations in the balance mechanism.

Neuromuscular scoliosis is second only to idiopathic scoliosis in frequency. With the decline in poliomyelitis, which was the most common type of neuromuscular scoliosis, other diseases such as

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cerebral palsy, syringomyelia, Friedreich's ataxia and juvenile spinal muscular atrophy now make up the greater part of this group. This type of scoliosis can be noted at a very early age because the underlying disease is often present at birth. The associated curvature can progress to a devastating deformity if not treated. (Fig. 2) Cardiopulmonary complications from a severely deformed chest, especially when associated with respiratory muscle weakness, can lead to an early demise.

Congenital scoliosis is caused by faulty development of the bony structure of the spine during the fetal period. The skeletal defects can be associated with other congenital anomalies of the heart, urinary tract or central nervous system. Sometimes congenital scoliosis is apparent at birth; in other instances it may not be discovered until the child exhibits an abnormal posture or gait. The most rapidly progressive type of curvature occurs when one side of the spine has failed to separate into segments. In this situation normal growth potential remains on the opposite side causing the spine to grow asymmetrically and curvature results. (Fig. 3) If only half a vertebra forms this can tilt the spine but if several hemivertebrae are present, they may "balance out" each other so that only minimal curvature results.

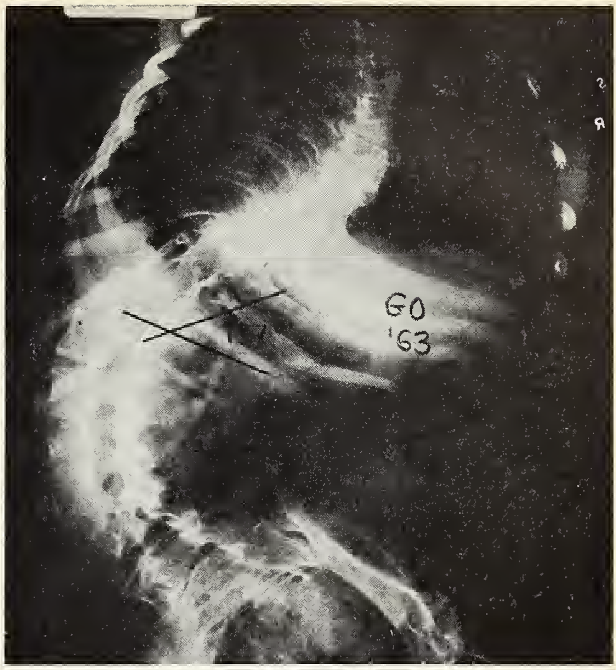

Figure 2

18-year-old female college student with juvenile spinal muscular atrophy.

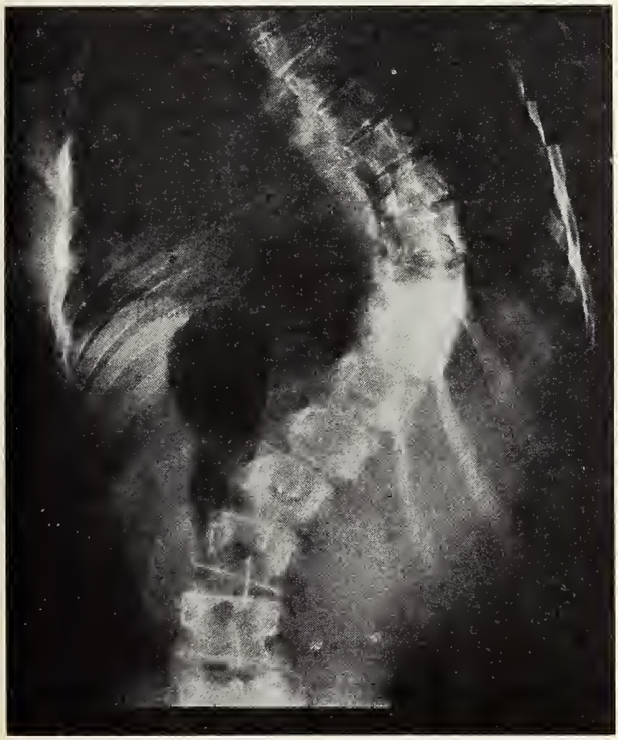

Figure 1

Severe right thoracic idiopathic curve in a 13-year-old girl. (X-rays viewed as though looking at patient from back).

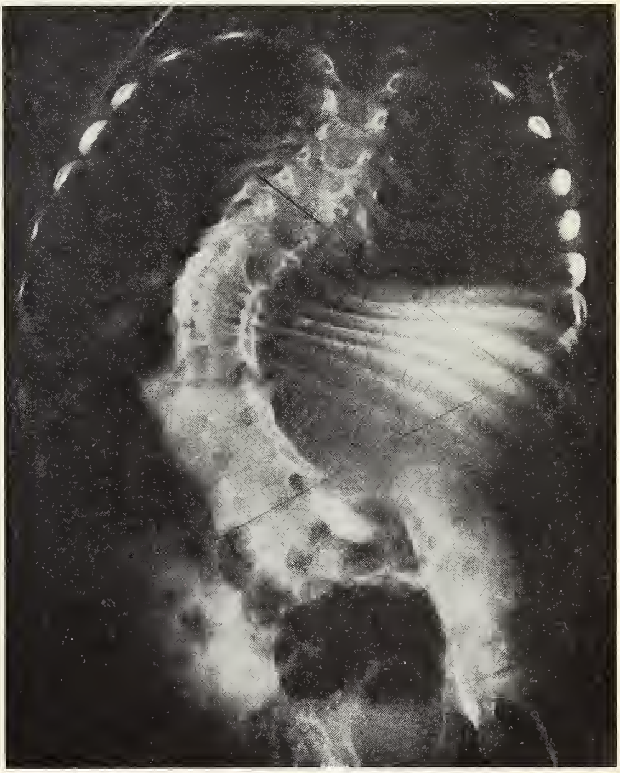

Figure 3

4-year-old child with "unilateral bar" on right side in both thoracic and lumbar spine.

Other causes of scoliosis include neurofibromatosis, which produces a typical short, sharply angulated curve, (Fig. 4); trauma, especially when associated with unequal damage to spinal growth centers or paralysis during the growth period; abnormality of the supporting ligaments such as Marfan's disease; and occasionally spondylolisthesis. Unequal leg length can produce a secondary curvature because of the unlevel pelvis. Pain such as that due to a ruptured intervertebral disc, tumor or infection can cause lateral curvature of the spine but usually these correct when the underlying disease is obliterated.

Presenting Signs

Visible changes noted by parents usually bring a child to the physician. A difference in the level of the shoulders, prominence of one "hip," or an uneven hemline are the findings often noted by parents. Because of this parents must be educated in recognizing the subtle changes if early recognition is to be achieved. *Pain* rarely is a complaint as a presenting symptom.

Cardiopulmonary changes, when they occur, are the most pressing medical reasons for treatment and prevention is a major objective in treatment. The chest deformity associated with a severe curve, or a lesser curve with respiratory muscle weakness can reduce the efficiency of the lungs. Curvature alone does not usually reduce lung efficiency measurably unless it becomes severe (over 70 degrees), but an associated neurological or muscular disease can precipitate complications. Recurrent infection, pulmonary decompensation, pulmonary hypertension, and, ultimately, right sided heart failure is the usual sequence of events.

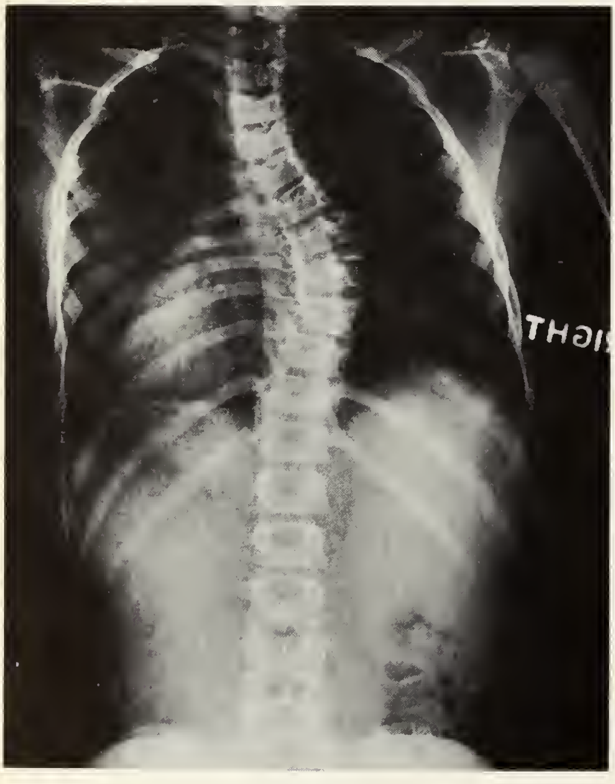

Figure 4
8-year-old child with neurofibromatosis and typical curvature.

Recognition

Successful management of any spinal curvature depends upon early recognition. In neuromuscular diseases and congenital anomalies early recognition of a scoliosis should be facilitated by a high index of suspicion. But the most frequent curvature (idiopathic scoliosis) appears in otherwise healthy individuals. Here early recognition is made more difficult because adolescent children are bashful and do not wish to be seen undressed, even by parents. It is not infrequent for parents to be startled by sudden discovery of an advanced curvature noted on routine physical examination or when attempting to fit clothing.

Certain features of scoliosis are readily recognized if they are demonstrated to parents so that they who are nearest to the problem can identify early changes. When viewed undressed, both shoulders should be level; both hips should be equally prominent; the flanks should appear symmetrical and the spine should be straight with the head centered over the pelvis. When standing erect the elbows should be level and equidistant from the trunk. (Fig. 5) It is important to notice whether there is unequal prominence of a scapula or one rib cage. This can best be detected by having the child lean forward keeping the knees straight, and sighting along the spine. In this manner small degrees of rib or flank asymmetry can be profiled. (Fig. 6)

Treatment

Once the suspicion of spinal curvature has been raised, thorough evaluation including appropriate x-rays of the spine is indicated. Early identification is important if progression of the curve is to be kept at a minimum. Three basic forms of treatment are available. (1) Educated observation with adequate follow-up; (2) bracing or corseting; (3) surgical correction. Initially, every effort should be made to arrive at an exact diagnosis and etiology since prognosis as well as treatment will differ accordingly. Generally, curves of less than 20 degrees require only periodic re-evaluation unless there is a shift of the trunk or an unusual cosmetic problem.

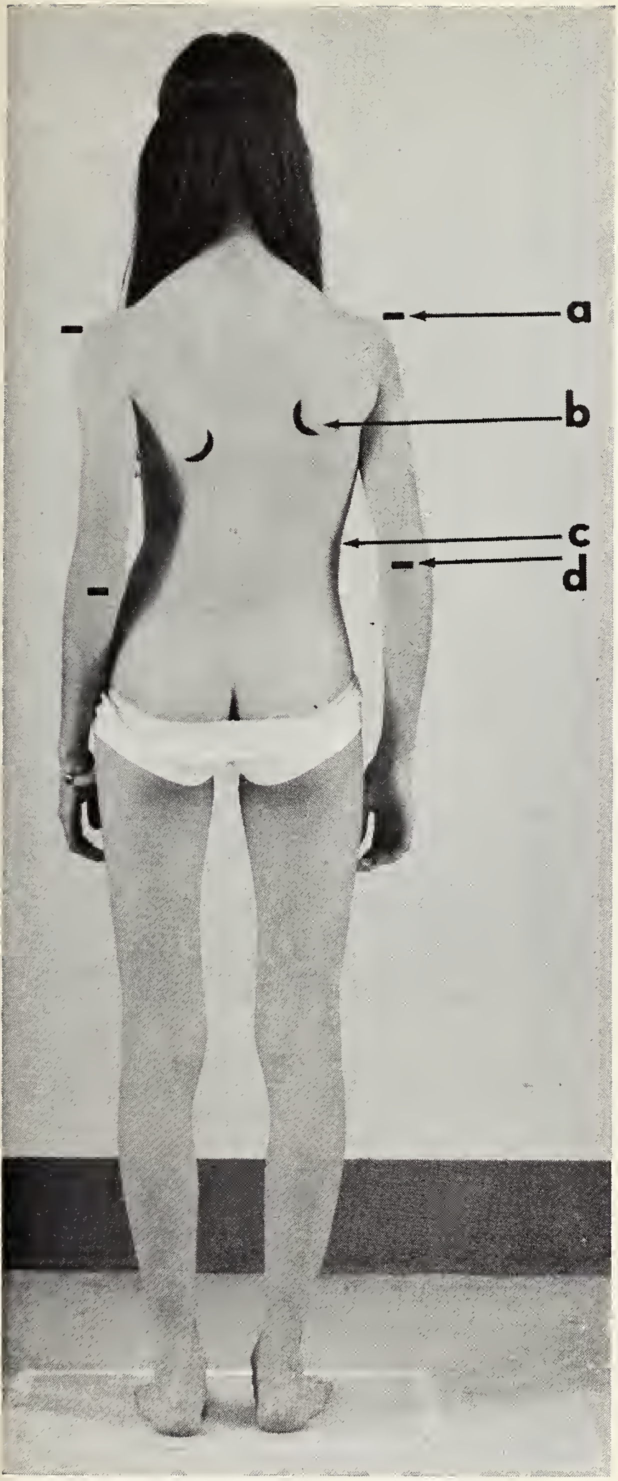

Figure 5

Mild idiopathic scoliosis. Note (a) level of shoulders; (b) level of scapulae; (c) prominence of flank or "hip"; (d) level of elbows and distance of elbows from trunk.

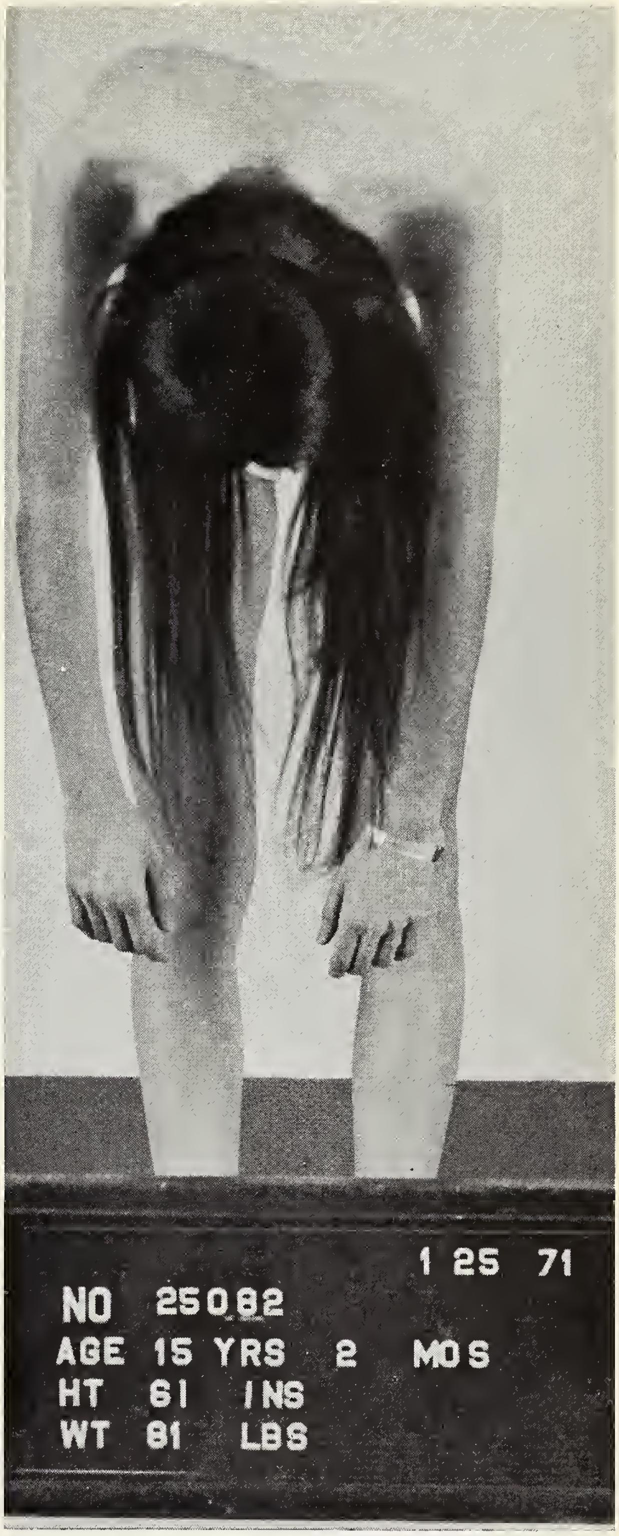

Figure 6

Same child as Figure 5 showing profile of "rib hump" more prominently than when viewed standing erect.

Prior to adolescence periodic observation at 6 to 12 month intervals ordinarily is satisfactory. During rapid growth periods more frequent evaluation is indicated.

If progression of the curvature is noted clinically and by x-ray evaluation, then a more aggressive approach is needed. A variety of braces and holding casts have been tried for over a hundred years but without significant success. About 20 years ago the "Milwaukee brace" was developed and has become the most widely employed non-operative treatment for appropriate curves. (Fig. 7) This method has had wide acceptance but most effective use is found principally in centers where a team of physician, brace maker and physical therapist is concentrated.[2]

Through extensive use of the Milwaukee brace at Newington Children's Hospital several basic concepts have been developed. (1) Unless the child is young and the curve mild, the brace should be considered only as a holding device. There may be initial lessening of the curve but after completion of therapy the result is usually close to the original curve. Such a result may well be considered successful because without bracing the progressive curve would have worsened. (2) Secondary cosmetic deformities such as the "rib hump" and "trunk list" can be improved with the Milwaukee brace. (3) Severe or rigid curves have been found to be unresponsive to this treatment. (4) Advanced curves in young children can be held for a time until surgery is appropriate. (5) If an idiopathic curvature is identified early, the spine is supple, and the patient is young, the Milwaukee brace with exercises does have the capacity to correct the curvature and maintain the improvement permanently. Unfortunately too few patients have their scoliosis found early. The importance of early recognition cannot be emphasized too strongly.

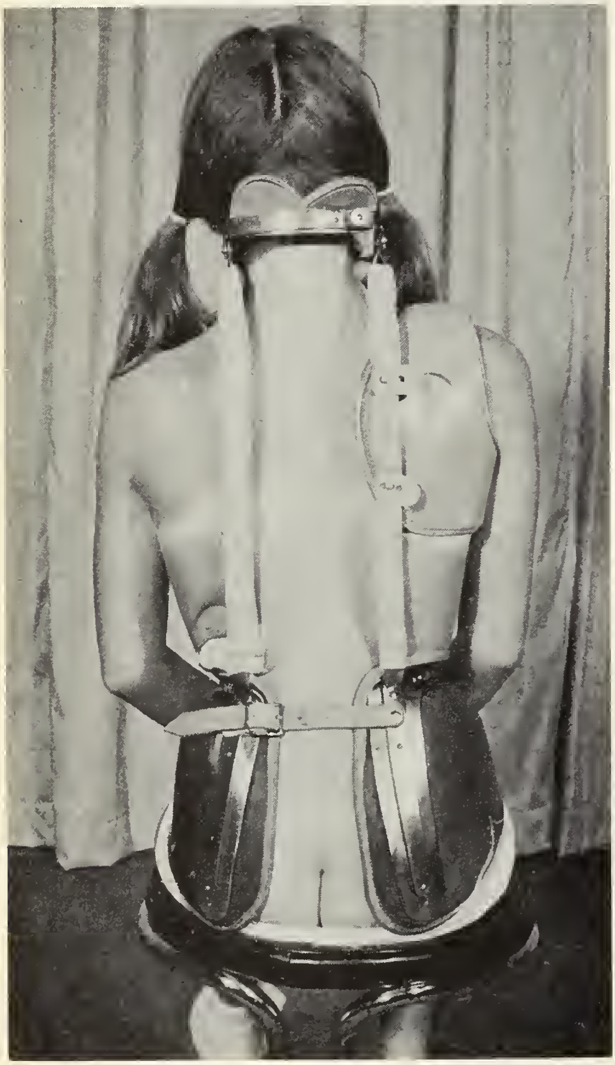

Figure 7

Milwaukee brace as currently used. Pad placement will vary with type and location of spinal curvature.

Progressive curves which are not amenable to Milwaukee bracing require surgical correction and spine fusion.[3,4] Technical advances in the last ten years have led to better correction and have even made possible ambulation of selected children two to three weeks after surgery. (Fig. 8) Post-operatively, a cast (Fig. 9) is required from the chin to the pelvis for about nine months and then approximately a three month period in a shortened version of the cast. Not all cases require fusions, and not all fusions are indicated at the same stage of life or degree of curvature. In particular, neuromuscular diseases, certain congenital conditions and curves associated with neurofibromatosis require earlier fusion.

Scoliosis spinal surgery carries certain hazards. Transfusion reactions, pulmonary complications and, though it is rare, even paraplegia have been described. The advantages and disadvantages must be discussed with patient and parents before undertaking this program. Pseudoarthrosis, or failure of the spine to fuse solidly, is an unwelcome but occasional occurrence. Spinal fusion for curvature associated with neurofibromatosis or neuromuscular disease as well as for the more severe curves has a higher incidence of pseudoarthrosis. Therefore, in these particular instances re-exploration and reinforcement of the fusion mass at 6 months may be advisable.

Conclusions

The various treatment methods for spinal curvature are all predicated on recognition of the curvature and proper diagnosis. The smaller the curve and the earlier it is detected, the greater the potential for correction and the better the results. Early recognition of scoliosis requires awareness on the part of examining physicians and education of parents to look periodically at their own children.

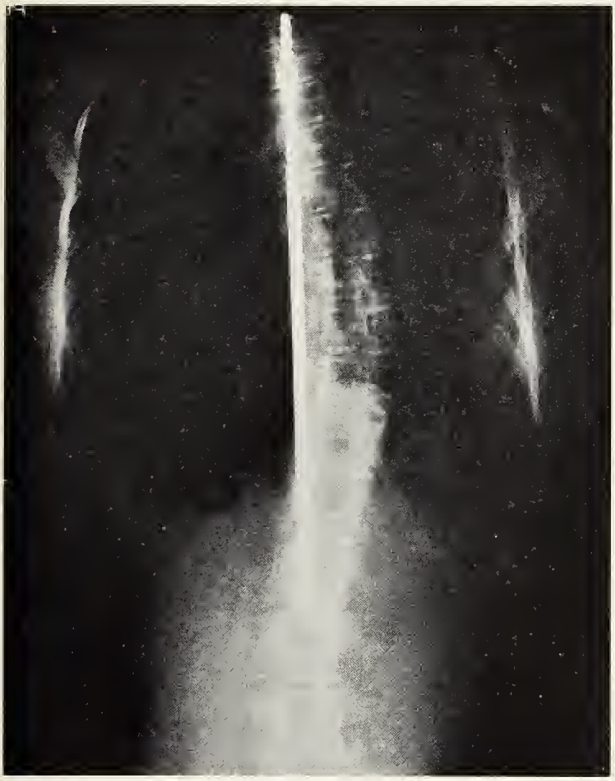

Figure 8

Same child as Figure 1 after spinal correction, fusion and "rodding."

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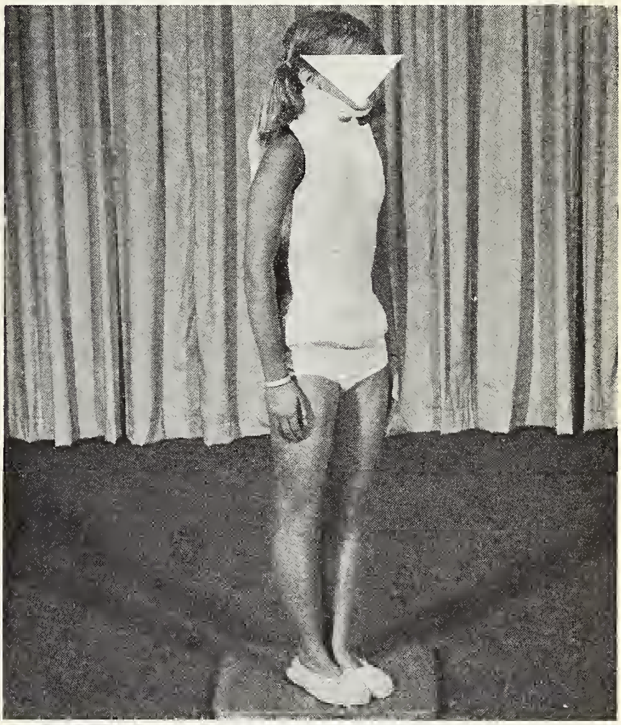

Figure 9

Corrective "localizer" body cast for scoliosis.

Connecticut Medicine

Editorials

Dr. J. Alfred Fabro Appointed Editor of *Connecticut Medicine*

J. Alfred Fabro, M.D.

The Council of the Connecticut State Medical Society announces the election of Dr. J. Alfred Fabro as Editor of *Connecticut Medicine.*

He is a graduate of Yale University and Tufts Medical School, cum laude. Dr. Fabro specializes in General Surgery and is a diplomate of the American Board of Surgery and Fellow of the American College of Surgeons. He lives in Litchfield and practices in Torrington. He is on the staff of the Charlotte Hungerford Hospital in Torrington.

During World War II, he was a member of General Hospital No. 7 the Boston City Hospital Unit.

Dr. Fabro is a member of the Connecticut State Medical Society's Judicial Committee, Committee on Medical Education, and the Statewide Planning Committee. He is chairman of the New England delegation to the American Medical Association. He is a member of the American Association for the Advancement of Science and of Alpha Omega Alpha.

Dr. Fabro studied law at the University of Connecticut and is the author of articles in the field of medical ethics and medical legal subjects, especially the rights of physicians in hospitals.

Dr. Fabro has been a member of the Editorial Board of *Connecticut Medicine* for some years.

And Now The Physician's Assistant

Today in this country virtually all family physicians and pediatricians, most internists, and some obstetricians, serve as primary care physicians to patients and their families. Nevertheless, a large number of people are living in areas that can be classified as "medically underserved." The problem is particularly acute in the slums, urban ghetto, and in many rural communities. While it may be true that more physicians are needed, maldistribution and less than optimum utilization of health personnel result from conditions which cannot be treated simply by increasing supply. In fact, the problem might even be aggravated by such an approach.

A preferred approach is to foster more effective use of existing health manpower and to encourage use of new types of allied health personnel where their need has been demonstrated. Analysis and reorganization of the physician's task are now being widely considered in an attempt to increase his effectiveness. The "physician's assistant" is viewed as one who will provide selective diagnostic and treatment services under the direction and supervision of a licensed physician, thereby enabling the physician to render increased services through more efficient use of his knowledge and abilities.

The "physician's assistant" is a skilled person qualified by academic and practical training to provide patient services under supervision and direction of a licensed physician who is responsible for the performance of that assistant. The assistant will be trained to recognize which problem or procedure is beyond his competence and turn it back to his supervising physician for management. Obviously, the concept of a "physician's assistant" is an alternative manpower resource for extending physicians' services. At the same time, organized medicine must assume responsibility for assuring an orderly and rational development for their new occupation, if it is to become a formal adjunct to the delivery of medical care. These individuals are to be trained to assist the physician in his clinical or even research endeavors in such a way as to facilitate better use of available physicians and nurses.

At Duke there is now a 24 month curriculum divided into nine month didactic portions and a 15 month clinical portion. It will train assistants to family physicians, internists, but also to all specialties in medicine. Since then a considerable number of additional programs have been developed throughout the country, one just being opened at the Yale School of Medicine. A variety of names used to identify physician's assistants that are currently in use are clinical associate, child health associate, community health medic and medical services assistant to name but a few.

Pilot programs vary in length from 5 weeks to 5 years depending on the degree of education and experience required of candidates for admission. Some programs recruit persons with varying levels of nursing experience, with experience in another allied health field and in some cases, even with high school education only. Thus, the educators are producing many different kinds of medical workers under the generic term "physician's assistant" to function at different levels of responsibility across a wide range of medical practices.

It is difficult to predict the future viability of the "physician's assistant" as a new occupation on a national scale. Many physicians have expressed concern that should such assistants be produced and accepted in large numbers that they may become substitute physicians. The concern inevitably leads to this question: Would such development not result in two levels of care? This issue, as well as those involving the fragmentation of health services, the cost of medical care, the liability insurance and relationship with other professional groups, particularly the registered nurse, will have to be faced by responsible planners and policymakers.

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The Editorial Board wishes to note with deep regret the passing of Dr. Herbert Thoms, former literary editor of the* Connecticut State Medical Journal *and a towering figure in Obstetrics and Gynecology nationally and internationally for over fifty years. His distinguished career is detailed in his obituary printed elsewhere in this issue.

The Editorial Board

Basically, there is theoretical agreement as to the efficacy of the "physician's assistant" concept as a means of extending physician services, but more consideration needs to be given to such issues as legal status, patient acceptance, physician acceptance and relationships with nurses and allied workers before financial support is given to developing programs on a widespread scale.

The role and function of the "physician's assistant" in the medical care system undoubtedly will come to be better defined and appropriate curriculum clarified and means adopted to assure that the best standards of education and performance are maintained. The potential of the "physician's assistant" in the health and medical care system is great. However, the pressures for producing him in increasing numbers and in widely diverse educational settings are already growing so fast that sound thought and action are needed now to prevent the chaos on which the situation is bordering. It is the responsibility of all concerned and particularly of the medical profession to bring about a rational development of physician-support personnel.—L.H.N.

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Pollution Problems: The Cayuga Lake Case

After acquiring the plant site and conducting unpublicized preliminary surveys, the local electric utility company publicly announced its plans to construct an 830 megawatt nuclear-fueled steam turbine electric station next to its small coal-fired plant already operating at Cayuga Lake. The company plan was to use water at 45°F for cooling the nuclear plant's condensers. They were to take water from the bottom of the lake and warm it at a rate of 500,000 gallons per minute the year-round.

A number of scientists in the area were concerned about the predictable and possibly ill effects of this operation on the lake. There were primary effects from changing surface waters to secondary effects such as changes in species composition in the lake's plant and animal populations, further oxygen depletion in the bottom waters and increased heat storage in winter. Small quantities of radionuclides discharged into the condenser cooling water would become concentrated in this slow-flushing lake, and further concentrations could be expected biologically through food chains and physically through local irregularities in water circulation patterns.

A particularly encouraging result of the scientists' concern was a great deal of imaginative thinking on the problem by a wide variety of scientists, engineers, economists, and others. One physicist, for example, suggested using some of the generated electricity to remove nutrients from the water in its passage through the cooling cycle and thus reduce the aging of the lake. Other scientists proposed an ingenious scheme for building a pumped-storage cooling pond on the plain several hundred feet above the lakeshore plant site. The company would have none of it.

The utility company's actions in the Cayuga Lake case seem to illustrate a behavior pattern fairly common in controversies of this type. The strategy was to announce the proposal after plans for implementing it were well under way and to keep things moving ahead rapidly to prevent citizens' protest. The company would see to it not to "harm" the lake. Yet the company was unwilling to debate issues or to discuss alternatives. They were not receptive to the idea of using already available technological safeguards that would eliminate hazards of thermal and radiological pollution of the lake at a cost of less than 25 cents a month to the users of power.

The company was less than frank in some instances and indeed appeared cynical. It developed that the company had already invested 5 million in site preparation and had contracted to sell most of the power to Consolidated Edison of New York, at the same time as research to assure that the lake would not be harmed was still under way. The scientists then demanded a plant that would not harm the lake, while the company insisted that the maximum possible protection would be too costly and therefore unjustified.

The real reason seemed to be economic. The private utility wanted to be able to compete with some of the public or quasi-public utilities that are reaching into this area. What the company was up to was to concentrate its interest and attention on the cost of the service with insufficient concern for the side effects that the minimum cost concept generally produces.

A year after the proposed power plant was announced, an active, well-organized and growing citizens' group concerned with possible effects on the lake was formed. This group and others concerned went to the legislature which passed two good laws which were promptly vetoed by Governor Rockefeller.

The typical attitude of the polluters is it must be done now. You can't stop progress. It will benefit the majority. It will harm no one. Since there is no proof that the development will damage the environment, we can safely assume it will not. All applicable alternatives have been considered! All effects of the program have been considered.

However, there are questions which should be asked. Who participated in formulating the assumptions and conclusions about the program's desirability? What lasting social benefits and costs will this program produce? Who will derive the benefits? What environmental problems will or may be created? What alternatives exist? Has the relative desirability of not enacting the program been evaluated?

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Man's adverse influence on natural environments are accelerating. There is now abundant evidence of severe limitations on our ability to predict, prove, or reverse pollution effects. For these reasons, we cannot wait to measure environmental damage from technology after it has occurred. We must use our knowledge to recognize and interpret threats to the environment before they become realities. When the likelihood of damage can be foreseen, the damage should be forestalled.

There is as much need for safety factors in managing our natural environment as there is in planning a bridge or a boiler. Senator Muskie speaking of thermal pollution of water stated, "You got to take the point of view that if we don't know enough, we don't know enough to permit the discharge."

Global ecologists point out that our planet is in fact a space vehicle with a mushrooming human population and a balanced, continuously recycling life-support system. Because key elements of this system are increasingly threatened by man's pollution activities, we must develop an effective early warning process. In this process scientists must play the key role.—L.H.N.

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THE COVER

In 1969 the age adjusted incidence rates for all malignant tumors diagnosed in Connecticut residents were 297.3 per 100,000 for males and 295.1 for females. Women, however, had the largest number of reported cases, 5,168 as compared to 4,620 in men. Cancer of the breast represented 27% of all tumors diagnosed in women, up from 25% in 1968. This reflected a precipitous rise in the age adjusted incidence rate from 71.0 per 100,000 in 1968 to 80.9 in 1969. The greatest increase in tumors in men was found in the respiratory system for which the rate climbed from 63.7 per 100,000 in 1968 to 67.3 in 1969. Cancer of the lung and bronchus accounted for the greatest proportion of these tumors and represented 19% of all tumors diagnosed in men in 1969 as compared to 18% in 1968. Cancer in Connecticut, 1969, Connecticut Health Bulletin, Vol. 86, No. 4, April 1972.

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Joel A. Sherman, M.D., St. Mary's Hospital, Waterbury, Conn. 06702.

Venkatachala I. Sreenivas, M.D., 45 Donna Dr., Apt. B-7, New Haven, Conn. 06513.

Martin H. Stein, M.D., 524 Whitney Avenue, New Haven, Conn. 06511.

Stephen A. Stein, M.D., 2 Church Street South, New Haven, Conn. 06519.

Robert B. Toffler, M.D., 789 Howard Avenue, New Haven, Conn. 06504.

Louis G. Welt, M.D., 789 Howard Avenue New Haven, Conn. 06504.

Tolland County

Robinson Cook, M.D., 276 Hazard Avenue, Enfield, Conn. 06082

Gerald L. Schwartz, M.D., 57 Union Street, Rockville, Conn. 06066

Spencer Silverbach, M.D., 177 Elm Street, Enfield, Conn. 06082

Windham County

Donald M. Wintrob, M.D., R. R. #1, Mansfield Center, Conn. 06250

FROM THE EXECUTIVE DIRECTOR'S OFFICE

160 St. Ronan Street, New Haven, Conn. 06511
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Assistant Executive Director
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William R. Richards, M.D.
Executive Director
Josephine P. Lindquist
Associate Executive Director

Leonard R. Tomat
Assistant Executive Director
Scientific Activities

SUMMARY OF ACTIONS COUNCIL MEETING

Thursday, November 2, 1972

I. ATTENDANCE

Present in addition to the Chairman, Dr. K. F. Brandon, and the Vice-Chairman, Dr. D. A. Grendon, were Drs. Cramer, Root, Jr., Backhus, Nolan, Weber, Fabro, Hess, Bradley, Johnson, Ragland, Jr., Harwood, Pelz, Wilson, Roch, Nemoitin, VanSyckle, Friedberg, Canzonetti, Harkins, LaBella, Milles, Freedman and Klare.

Also present were: Mrs. Lindquist, Mr. Tomat, Mr. Sweeney, Mr. Sullivan (AMA), Mr. Olson (FCMA), Dr. West (NHCMA), Dr. Nichols (Chairman, Committee on Cooperation with Medical Schools of Connecticut) and Dr. Richards.

Absent were: Drs. Spitz, Dean, Gardner, Rem, Dambeck, Krinsky and Hastings.

II. ROUTINE BUSINESS

Approval of Minutes

As published and distributed, it was VOTED to approve the minutes of the meeting of September 28, 1972.

Life Memberships

It was VOTED to approve an application for Life Membership received from the following eligible Active Member:

Henry Wexler, 340 Whitney Avenue, New Haven (NH) 1/1/73.

Election of Student Members

It was VOTED to elect to Student Membership 34 Connecticut residents who are enrolled in American medical schools. A list of those elected will be published in the Journal.

Date of Next Meeting

The next meeting of the Council was scheduled to be held on Wednesday, January 3, 1973.

III. OLD, NEW AND SPECIAL BUSINESS

Resignations, Appointments, Etc.

(a) *Advisory Committee of CSMS Connecticut Ambulatory Care Study*: It was VOTED to designate the following member of the Committee on Statewide Medical Planning to represent the Society on the Advisory Committee of the Connecticut Ambulatory Care Study: David A. Grendon, Sharon; Sidney L. Cramer, Hartford; Saul Milles, New Haven; James H. Root, Jr., Waterbury; and Carl W. Johnson, Thompsonville.

(b) *Committee on Accident Prevention; Committee on Emergency Medical Services*: It was VOTED to accept, with regret, the resignation of Edward A. Rem, Norwalk, as chairman of both of these Committees, and it was further VOTED to retain Dr. Rem as a member of both Committees and to act as a liaison person between the Committees and the Council.

Concerning replacement of Dr. Rem as chairman of each of the Committees, it was VOTED to defer action on making such replacements and to ask the Chairman of the Council to consult with Dr. Rem and others concerning qualified members of the Society to be recommended to the Council for appointment to these posts. In a further action, it was VOTED to recommend to the House of Delegates on December 6, 1972, that the amendment to the Bylaws which proposes to combine the two Committees, now lying on the table, *not* be adopted. Vote: 12-8.

Reports re New $150 License Registration Fee

It was VOTED to accept for filing subject communications (reports) as follows: (a) An opinion submitted by CSMS legal counsel; (b) a letter from Commissioner Foote of the State Health Department; (c) a letter from Senator Cutillo, chairman of the Assembly's Finance Committee; and (d) two resolutions adopted at recent meetings of the Middlesex County Medical Association. In substance, it was the view of both CSMS legal counsel and Commissioner Foote that the General Assembly has the power to increase the licensing fee from $10 biennially to $150 annually, whether or not the latter fee had any relationship to the administrative costs of registration: that Phase 2 price-wage regulations are not applicable to legislative actions; that the amount of the fee is probably not sufficiently great to warrant contesting its "exorbitancy" in court; and that provision for exemption of payment of all or part of the fee in appropriate circumstances could be sought by the Society via sponsorship of a subject bill at the 1973 session of the General Assembly. Pursuant to the latter possibility, it was VOTED to request the Committee on State Legislation to consider the matter of exemptions and to make a report with recommendations to the Council concerning same. In light of legal opinion regarding possible court action, the MCMA resolutions could not be implemented.

Election of Permanent Editor of the Journal

The President, Dr. Grendon, reported for the Committee on Preliminary Study of Nominations and informed the Council that the Committee recommended the election of J. Alfred Fabro, Torrington, as permanent Editor of *Connecticut Medicine,* effective immediately. There being no other nominations, it was VOTED to close nominations, and Dr. Fabro was elected Editor without dissenting vote.

It was further VOTED to thank William F. Eckhardt, Jr., New Canaan, for his service as Acting Editor and Editor pro tem during the months of August, September and October, and to commend him for the quality of the issues published under his supervision.

Dr. Fabro thanked the members of the Council for their action in electing him to the post and outlined briefly his concept of the Journal, the role of the Editor, the role of the Editorial Committee, etc. At his request, the Council VOTED further to direct the President to appoint a small ad hoc committee of members of the Council (perhaps four) to consult with Dr. Fabro forthwith to discuss with him the editorial policy of the Journal and the future format of the publication.

Budget for Fiscal 1973

The President, Dr. Grendon, reported for the Fiscal Committee and presented the budget prepared and recommended by the Committee for 1973. Following Dr. Grendon's presentation, the Council VOTED to approve the budget as prepared by the Fiscal Committee and to approve four recommendations as follows:

1. That, excepting committees and representatives that meet jointly with those of other organizations, all budget allocations made for covering anticipated expenditures for food be based on the numerical strengths of committees, representatives and advisors, the number of meetings normally held during the fiscal year, average attendance, and the estimated cost per meeting of buffet meals served at the Society's headquaters building.
2. That the Council direct the Sub-committee on Administrative Organization and Planning to make a review of all annual reports of committees, representatives and advisors submitted to the 1973 annual meeting of the House of Delegates, such review to determine the relevance, efficiency and accomplishments of each and the use of budgeted funds and to report to the Council its findings and recommendations.
3. That the CSMS annual membership dues for 1973 remain at $70.00.
4. That the budget for fiscal 1973, as presented by the Fiscal Committee, be approved by the Council and transmitted to the House of Delegates on December 6, 1972 with the recommendation that it be approved by the House.

Connecticut Regional Medical Program

(a) *CRMP-CSMS Liaison and Communications*: It was VOTED to refer to the four CSMS-designates on the CRMP Advisory Board, for study and report to the Council, a proposal made by J. Alfred Fabro, Torrington, that CSMS ask CRMP for funds with which to employ a part-time or full-time person "to act as administrative liaison man between CSMS and CRMP."

(b) *Comprehensive Report on CRMP to House of Delegates*: It was VOTED to accept the offer of J. Alfred Fabro, Torrington, to prepare and present to the House of Delegates on December 6 a comprehensive report on CRMP's current programs, policies and operations, it being understood that the report prepared by Dr. Fabro would be submitted by him to Drs. Rem, Granoff and Johnson for comment and suggestion prior to finalization for presentation to the House of Delegates.

(c) *CRMP "Report of Committee to Advise on Development Component Relating to Primary Care*: Brought to the attention of the Council by James H. Root, Jr., Waterbury, this document engendered lengthy discussion and prompted taking of the following action:

It was VOTED that the Council of the Connecticut State Medical Society communicate to CRMP forthwith that the Council has deep reservations regarding the philosophy toward primary care promulgated by the "Report of the Committee to Advise on Developmental Component Relating to Primary Care" and request CRMP to delay any further action to implement this report until representatives of CRMP have met to discuss the report with a committee to be appointed by the CSMS Council and request further that such meeting be held as soon as possible.

Report—Committee on PRO's, Foundations and HMO's

It was VOTED to accept for filing a report of the Committee on the development, with representatives of the Connecticut Hospital Association, of a "Joint Utilization Review Panel", and to approve a recommendation of the Committee as follows: That, as a result of the joint sub-committee meeting held on September 18, 1972, it is proposed that the CSMS and the CHA (1) immediately establish a joint utilization Review Appeals Panel for the purpose of resolving any points of dissatisfaction evolving from decision of local hospital utilization review committees and (2) that the CSMS and the CHA charge this Appeals Panel with the responsibility for the study and establishment of utilization review standards to be used by hospital utilization review committees.

It was further VOTED to authorize the Committee to advocate that there be 10 M.D.'s on the Appeals Panel instead of the 8 M.D.'s stipulated in the report.

N.B.: *The foregoing is a summary of the proceedings and action of the Council on November 2, 1972. Detailed minutes of the meeting are on file at 160 St. Ronan Street, New Haven, for perusal by an interested member of the Society.*

Meeting Notices

The information on this "notices" page is offered as a service of all specialty groups and allied health agencies in order to publicize continuing medical education programs available to subscribers. The deadline for publication in Connecticut Medicine *is the tenth of the month preceding, date of issue. Send copy to: Connecticut State Medical Society, 160 St. Ronan Street, New Haven, Connecticut 06511.*

GENERAL

September, 1972-May, 1973
6:00 p.m.-8:15 p.m.—Every Tuesday
Basic Sciences Related to Clinical Medicine
Lawrence and Memorial Hospitals
New London, Connecticut
Contact: Edward Gipstein, M.D.
Director of Medical Education

April 24, 25, 26, 1973
181st Annual Meeting of the Connecticut State Medical Society
Hartford

SURGERY

January 18—Thursday—Afternoon and Evening
Annual Meeting of the American College of Surgeons, Connecticut Chapter
Hotel Sonesta, Hartford
Contact: Francis M. Hall, M.D.
140 Woodland Street, Hartford, Connecticut

ALLERGY

March 10-11, 1973—Saturday and Sunday
Provocative Allergy Course
Mobile, Alabama
Contact: Joseph B. Miller, M.D.
3 Office Park, Mobile, Alabama 36609

LIVER DISEASE

January 8-10, 1973—Monday-Wednesday
American College of Physicians
Contact: John T. Galambos, M.D.
Emory University, Atlanta, Georgia

Placement Wanted

Allied Personnel

Physician's Assistant—40 years of age. College degree. Available December 1972. Presently in training under U.S. Public Health Service Program. Robert B. Weinheimer, 25 East 213 Street, Bronx, New York 10467.

MEDIHC Program—Former military medics; number of candidates available. Contact: Henry J. Miller, Military Experience Directed into Health Careers, 640 Chapel Street, New Haven, Connecticut 06510. Phone: 865-0862.

Anesthesia—32 years old. Board eligible. (FLEX) Presently in practice. Interested in medium sized community in group or associate type practice. Husband a general surgeon. Celia Mercado- Sagullo, M.D., 138 Terrace Place, Brooklyn, New York 11218.

Emergency Room Physician — Connecticut license. Desires position from March, 1973, to July, 1973. ER experience. Presently in the service. Perin W. Diana, Jr., M.D., USA Medical Center, Box 130, APO San Francisco, California 96331.

Family Practice—35 year old. Connecticut license. Interested in group or solo practice. Indarjit Singh, M.B., Ch.B., Georgetown Apts., 1-4 Bradley Circle, Enfield, Conn.

Dermatology—Board Certified. Presently Chief of Dermatology at the Naval Dispensary, Washington, D.C. Interested in associate, partnership or solo practice in a metropolitan area. Robert P. Feinstein, M.D., 9146 Springhill Lane, Greenbelt, Maryland 20770.

Internist—Hematology and Oncology. Available January 1973. Board eligible. Group or associate practice. 33 years old.

Internist—Cardiology—Specialist in Rheography. Connecticut license. Presently in practice in Greece. Available in 10 months.

Cardiology—30 years old. Board certified in internal medicine. Board eligible in cardiology. Private practice or hospital based. Richard H. Landesman, M.D., 477 Comstock Place, Highland Park, Illinois 60035.

Internist—30 years of age. Board certified. Interest in general internal medicine with nephrology as sub-specialty. Desires group practice in large community. Neil P. Dreyer, M.D., 1835 Corporal Kennedy Street, Bayside, New York 11360.

Internist—Cardiology. Board certified. Presently on cardiology fellowship at Ohio State, 30 years old. Group, associate, or institutional practice. Toby R. Engel, M.D., 2043 D Prince George Drive, Columbus, Ohio 43209.

Internal Medicine—Oncology and Hematology. 32 years old. Board eligible. Group, associate or institutional practice. Large or medium sized community. Harold Glucksberg, M.D., 70-28 17th N.E., Seattle, Washington 98115.

Internist—Connecticut license. Board eligible. Interested in pulmonary diseases. Solo or group practice in large or medium sized community. Available in December 1972.

Internist—Connecticut license. Board eligible. Desires group or associate practice in medium sized community. Greater New Haven area, if possible. Richard J. Barse, M.D., 195 Hepburn Road, Hamden, Connecticut 06517.

Internist—Cardiology. Board eligible. Desires group or associate practice in large community. Available July 1973.

Internal Medicine—Gastroenterology—Board eligible. 31 years of age. (FLEX) Group or associate or institutional practice in large or medium sized community.

Internal Medicine—Pulmonary Diseases. Group or associate or institutional practice. National Boards. 30 years old.

Internist—Gastroenterology—Board certified. 33 years old. Group practice in large or medium-sized community.

Internist—Board eligible. Connecticut license. Desires medium or small community. Solo, group or associate practice. 32 years of age. Presently at Alaskan Native Medical Center. John J. Posner, M.D., 7420 Branche Drive #A, Anchorage, Alaska 99502.

Internal Medicine—Emphasis on ICU-CCU and cardiology. 30 years old. Board eligible. Group practice in medium sized community. Abner B. Preacher, Jr., M.D. University Hospitals—Dept. of Medicine, Iowa City, Iowa 52240.

Internal Medicine—Available early spring 1973. Group practice in larger community. Boards taken in June 1972. Presently at Mayo Clinic. Sheldon L. Markowitz, M.D., 5018 16th Avenue, N.W., Rochester, Minnesota 55901.

Rheumatology—31 years old. Board eligible. Desires group or associate practice. Presently in the service. Stephen B. Miller, M.D., 700 Locke Court, Virginia Beach, Virginia 23462.

Internal Medicine—Available April 1973. Board eligible. Desires small group practice in medium sized community. Frederick W. Neinas, M.D., 1520 S.E. 9th Avenue, Rochester, Minnesota 55901.

Internal Medicine—Rheumatology—33 years old. Board eligible. Group or associate or institutional practice. Desires southwestern or western Connecticut. Kenneth J. Lippman, M.D., 305 E. 24th Street, New York City, New York 10010.

Cardiologist—Board eligible. Board certified in internal medicine. 30 years of age. Interested in medium or small sized community. Group, associate or solo practice. Robert G. Matthews, M.D., 219 Race Street, Pittsburgh, Pennsylvania 15218.

Internist—Board Certified. Board eligible for cardiology. Presently staff cardiologist at Naval Hospital in Portsmouth, Virginia. Group, associate or institutional practice desired in larger or medium sized community.

Internal Medicine-CV—National Boards, Board certified. 48 years old. Connecticut license. Interested in hospital related position or group practice. John J. Mead, M.D., 211 East 53rd Street, New York, New York 10022.

Internal Medicine—Available January 1973. Board eligible. Connecticut license. Solo or associate practice. 42 years of age. Bernard L. Meyers, M.D., 18 Second Street, Troy, New York, 12180.

Internal Medicine and Endocrinology—Available immediately. Board eligible. FLEX. 42 years old. Group or associate type practice. T. N. Paul, M.D., 2900 S. Lincoln Avenue, North Riverside, Illinois 60546.

Internal Medicine—Part time work in Hartford area. Board eligible. Connecticut license. Clinic work or ER will be considered. 29 years old.

Internal Medicine-Hematology — Available December 1972. Board eligible. Medium size community with group or associate practice desired.

Internal Medicine-Cardiology—Board eligible. 35 years old. (Flex) Prefers institutional type appointment.

Internal Medicine—Board certified. Large or medium sized community in group or associate practice. Available in January. Subspecialty—nephrology.

Internal Medicine—Available immediately. Board Certified. Connecticut license pending. 30 years of age. Medium sized community desired. Group or associate practice. Resume on file.

Internal Medicine—Rheumatology—Connecticut license. Available immediately. Desires group or institutional practice in large city. 38 years of age. Will consiler emergency room position.

Internal Medicine—Primary care. Adult medicine. Group or associate practice in medium sized community. Connecticut license. Board eligible. Has interest in community clinic.

Internal Medicine—Infectious Diseases and Pulmonary Medicine—Board certified. New York license. Group, associate or institutional practice in large or medium sized community.

Internal Medicine—Gastroenterology. Presently fellow at Hanemann Hospital in Philadelphia. Board eligible. FLEX. Group or associate practice in large or medium sized city.

Internal Medicine—Hematology and Oncology—Board certified. New York and California licenses. 31 years old. Group or associate practice in large or medium sized community. Harry B. Richardson, Jr., M.D., 30 Casa Way, San Francisco, California 94123.

Internal Medicine—Group or associate practice. Virginia license. Board eligible. National Boards. 28 years old.

Neurology—Board eligible. Group or associate practice in large or medium sized community. Massachusetts license. 28 years old. Mark A. Kozinn, M.D., 33 Pond Avenue, Brookline, Massachusetts 02146.

Neurology—Board eligible. Group or associate practice in medium sized community. 31 years old. Lanny Edelsohn, M.D., 241 Winchester Street, Brookline, Massachusetts.

Neurology—Board eligible. 33 years old. Group or associate practice in medium sized or small community. Richard M. Sax, M.D., 3541 East Glencoe Street, Coconut Grove, Florida 33133.

Neurology—Connecticut license. Board eligible. Solo, Group, Associate or institutional practice. 32 years of age. Available in June.

Ob/Gyn—Board eligible. Associate, Group, Institutional or Solo Practice. Connecticut native wishing to return to state. 28 years of age. Presently at Georgetown Medical Center.

Ob/Gyn—32 year old Ob/Gyn desires group or associate practice. University-trained, Junior Fellow, board eligible with military obligation complete July, 1973. Married with two children. Ronald A. Cwik, M.D., U.S. Army Hospital, Box 607, Fort Ord, California 93941. (408) 242-4075—office, 242-5312—home.

Ob/Gyn—36 years old. Desires group or associate practice in medium sized community. Available July 1973.

Ob/gyn—Board exams taken in June. FLEX. Interested in group practice. Elie N. Shuhaibar, M.D., The Western Pennsylvania Hospital, 4800 Friendship Avenue, Pittsburgh, Pennsylvania 15224.

OB/GYN—Board eligible. Connecticut license. Available early 1973. 36 years of age. Group, associate or institutional type practice.

OB/GYN—Board eligible. Michigan license. 31 years old. Desires group or associate practice in large or medium sized city. Available mid 1973. Songkyu Shin, M.D. 2502 Alter Road, Detroit, Michigan 48215.

Ophthalmologist—Board eligible. National Boards. 30 years old. New York license. Desires solo, group or associate practice in medium or small sized community. Barry M. Epstein, M.D., 36 Jamstead Court, Williamsville, New York 14221.

Ophthalmologist—Board eligible. National Boards. Desires solo, group or associate practice. New York and Maine licenses. 30 years of age. Lloyd R. Hoffman, M.D., 455-69 North Broadway, Yongers, New York 10701.

Ophthalmologist—34 years old. Board eligible. National Boards. Large or medium sized city desired. Group, solo, associate practice desired. Available immediately.

Ophthalmologist—Connecticut license. National Boards. 30 years old. Wishes to return to Connecticut to establish solo or group practice. James R. Wilson, Jr., M.D., 111 Sheraden Avenue, Staten Island, New York 10314.

Ophthalmologist—Available February, 1973, Board certified. Desires group or associate or institutional practice in larger city. FLEX. 34 years old. Brij B. Ojha, M.D., Timberbrook #38, Bristoe, Indiana 46507.

Ophthalmologist—Connecticut license. National Boards. Desires solo, group or associate practice. Internship at St. Francis, Hartford. 31 years of age. Theodore W. Maron, Jr., M.D., 362 Park Avenue, Apartment 6A, East Orange, New Jersey 07017.

Ophthalmologist—Connecticut license. Board eligible. National Boards. Solo or associate practice. Large or medium sized city desired. Edward J. Martin, M.D., 1024 New Scotland Road, Albany, New York 12208.

Otolaryngologist—Board certified. Desires group or associate practice. 31 years of age. New York and Pennsylvania licenses. Edward B. Gaynor, M.D., 585 Maple Street, Fort Devens, Massachusetts 01433.

Otolaryngologist—Board eligible. National Boards. New York license. Desires large or medium sized community with group or associate practice. 31 years of age. Stephen R. Geller, M.D., 3807 Pecan Street, Portsmouth, Virginia 23703.

Otolaryngologist—Board certified. Desires associate practice in large community. Presently in practice in California.

Otolaryngologist—Desires solo, group or associate practice in medium sized city. New York license. 32 years old. George W. Hicks, M.D. 6139 Broadmoor Plaza, Indianapolis, Indiana 46208.

Otolaryngologist—Board certified. Massachusetts and New Jersey license. Desires group or associate practice in large community. 31 years of age. Joseph A. Moretti, M.D., 805 Finisterre, Lindenwold, New Jersey 08021.

Otolaryngologist—Board eligible. National Boards. 32 years old. Pennsylvania license. Desires solo, group or associate practice.

Otolaryngologist—Board certified. National Boards. 32 years old. Solo practice in large city. Minnesota license. Gary L. Townsent, M.D., 117 Nebraska, Dyess AFB, Abilene, Texas 7907.

Otolarnygologist—National Boards. Board Eligible. Desires solo, group or associate practice in medium sized city. 33 years of age. William K. Trzcinski, M.D., 16605 N.E. 19th Place Bellevue, Washington 98008.

Otolaryngologist—Board certified, 34, married, five-year university residency training in all phases of otolaryngology and maxillofacial surgery. Completing military service. Available in July 1973. Seeking private practice, association, group or solo, practicing all aspects of the specialty. Contact Gustav Braun, M.D., Box "O", Balboa Heights, Canal Zone.

Orthopaedics—32 years old. Board eligible. Desires medium sized community with solo or group practice. Gregory Chiarmonte, M.D. 222 Lenox Road, Brooklyn, New York, 11226.

Orthopaedic Surgery—Connecticut license. 31 years old. Prefers city of 20-60,000. Group or associate practice. David G. Publow, M.D., 126 Edgemont Road, Rochester, New York 14620.

Orthopaedics—Board certified. Connecticut license. Desires large or medium sized community in group or associate practice. Presently staff orthopaedic surgeon at Eglin Air Force Base. 32 years of age. Gerald L. Smolensky, M.D. 729 Osceola Circle, Eglin AFB, Florida 32542.

Orthopedic Surgery—35 years old. Board eligible. Associate practice. Trained in spine and hand surgery.

Orthopedics—Board eligible. (FLEX) 32 years old. Associate position desired. Swiss trained. Residency at Mt. Sinai, New York City.

Orthopedics—Board certified. FLEX. 32 years old. Institutional appointment desired. S. G. Khrishman, M.D., 407 Genessee Street, Orlean, New York 14760.

Pathologist—National Boards. Connecticut license. Board certified. Yale residency. Desires group or associate practice in large or medium sized community. Southern Connecticut, if possible. 31 years old. Mark A. Cohan, M.D., 5407 Greenfield Drive South, Portsmouth, Virginia 23703.

Pathologist—Board certified. California license. 31 years of age. Solo or group or associate practice in medium sized community. Loren J. Wolsh, M.D. 9050 La Linda Avenue, Fountain Valley, California 92708.

Pediatrics and Pediatric Hematology—Board eligible, 37 years old. New York license. Solo or group practice. Chi-Yen Kuo, M.D., 20 St. Paul's Court, Apartment 1D, Brooklyn, New York 11226.

Pediatrics—38 years old, Board certified, Connecticut license through endorsement. Fellow of A.A.P. Available with three month's notice. Prefers salaried arrangement for first year. Group or associate practice.

Pediatrics—Board eligible. Will consider clinic or public health position in western part of the state. 28 years of age. Married. Available immediately. Part or full time. Ann H. Hines, M.D., 82 South Street, Danbury, Connecticut 06810.

Psychiatry—Part time position in adult and child psychiatry. Connecticut license. Guilford or shore area desired. Board certified.

Radiologist—42 years old. Fully certified by the American Board of Radiology. Eligible for a Connecticut license. G. H. Hussein, M.D., 2411 Fifth Street, Fort Lee, New Jersey 07024.

Surgery-General—National Boards. Board eligible. Group or associate practice in large or medium sized community 100 miles from New York City. 32 years of age. Available February, 1973. George A. Knaysi, Jr., M.D., 14 LeMoy Street, Fort Bragg, North Carolina 28307.

Surgery-General—Board eligible. Presently full time hospital staff. (FLEX) solo or group practice in medium sized community. Wife practicing anesthesiologist. Nestor M. Segullo, M.D., 138 Terrace Place, Brooklyn, New York 11218.

Surgery—General surgeon, board certified, university trained, extensive trauma and vascular experience, desires associate or group situation. Available December 1972.

Surgery—General and thoracic. Board certified. Small or medium sized town. Group or associate practice. Available immediately. Harold McWilliams, M.D., 3119 Plymouth Rd., Norristown, Pennsylvania 19403.

Urology—Board eligible. Presently in practice. Available in 2 or 3 months. Group or associate practice preferred. Solo practice will be considered. 35 years of age. Wishes to move back east. Harvard and Columbia trained. Southern Connecticut preferred. Albert V. Assili, M.D., 40184 San Carlos Place, Fremont, California 94538.

ANYONE INTERESTED IN THE ABOVE IS ASKED TO CONTACT THE PHYSICIANS' PLACEMENT SERVICE, 160 ST. RONAN STREET, NEW HAVEN, CONNECTICUT 06511

Placement Opportunities

Allergist—Board eligible or certified, preferably with special interest in chest disease as associate, partner and eventual purchaser of a large and growing practice in allergy and chest disease in an excellent professional social community. Availability immediately or by July 1, 1973 would both be suitable for introduction of the appropriate physician to assume this excellent opportunity—initially with the assistance of the present allergist and a staff of several registered nurse clinicians. Opportunity for immediate professional and economic growth is unparalleled.

Allergist—Third allergist needed for rapidly growing group practice in central Connecticut. Present partners under 40 years of age.

Associate Medical Director—Duties require performing preplacement, special, periodic and executive medical examinations. Assist in administration of corporate medical programs. Background in internal medicine and/or industrial medicine would be helpful. Salary negotiable.

Director Environmental Health—Provide medical advice and counsel in all aspects of environmental health. Experience as either a general practitioner, surgeon or orthopedic man, with industrial medicine. Salary open. Contact: BK Associates, Hartford. Phone: 527-9107.

Emergency Room—Ambulatory Services—Full time position in 250 bed community hospital. Excellent new facilities. Group renders emergency and primary care to 75,000 population. Apply Richard P. Fredericks, Executive Vice President, Bristol Hospital, Brewster Road, Bristol, Connecticut 06010. Phone 589-2000.

Family Practice—Central Connecticut. Physician leaving after 15 years of solo practice to accept position as director of family practice residency program in another city. No OB. Grossing $80,000 plus. Modern leased office. Good community coverage. Open staffed 300 bed hospital. Available January 1, 1973.

Family Practice—Young physician wanted to join group practice in northwestern part of the state. Internist will be considered.

Family Practice—Suburb of Hartford. Physician in search of an associate. Convenient location. Attractive community.

Family Practice—Northeastern sector of the state. Convenient to Boston and Rhode Island. Associate type arrangement possible with physician presently in practice.

Family Practice—Community search committee wishes to contact interested physicians. Northwestern part of the state. Richard N. Collins, M.D., The Sharon Clinic, Sharon, Connecticut 06069.

Internal Medicine or Family Practice—Leaving practice for full time hospital post. Available January 1, 1973, in Milford. 150 bed hospital. Physician urgently needed in 60,000 member community. X-ray unit available. Physician will assist with orientation of new practitioner.

Primary Physicians Needed—Northeast corner of Connecticut covering ten town area of 60,000 people needs general practice and specialty physicians. Lowest per capita physician ratio in Connecticut. Attractive residential environment, excellent schools. 190 bed modern hospital primary care facility for the ten towns also needs salaried emergency room physicians. Doctors office building next to hospital presently under construction has office space available that can be built to incoming physician's specifications. Write Dr. John Meyer, Chairman recruitment committee, or administrator William J. Derevlany, Day Kimball Hospital, 320 Pomfret Street, Putnam. Connecticut 06260, or call collect 203-928-6541.

General Practice, Internal Medicine, and ENT: Needed in town of Torrington. 200 bed hospital. 50 physicians, over 50,000 population. Contact Joseph F. J. Curi, M.D., Chairman of Search Committee, Charlotte Hungerford Hospital, Torrington, Connecticut 06790. 203-482-0441.

General Practice and Internal Medicine—Both for solo and hospital based practice. Medium sized, north central community. Community hospital. Needed immediately.

General Medicine and Internal Medicine—Northwestern Connecticut community seeking to attract practitioners. Associate type practice possible.

Industrial Medicine—Internist needed for large Connecticut employer. Contact: R. J. Leonard, M.D., Medical Supervisor, Pratt & Whitney Aircraft, East Hartford, Connecticut 06108.

Internist—Four man group in Fairfield, Connecticut, in search for an associate. Send resume to the Physician Placement Service.

Internist—General medicine. To join young internist in growing practice. Early partnership. New London-Mystic area.

Internist—Several opportunities with the State of Connecticut. Contact John J. Crowley, Personnel Administrator, 79 Elm Street, Hartford, Connecticut 06115 or Edmund Beutsch, Veterans' Home and Hospital, Rocky Hill, Connecticut.

Internist—Two internists, hospital based, seeking expansion into larger group.

Internist—Board eligible or certified New office complex. Multi-Specialty coverage. Multi-specialty coverage. Covers Connecticut and Rhode Island area. Anthony Fusco, M.D., Westerly Medical Center, 83 Beach Street, Westerly, Rhode Island 02891. (596-0174).

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Internist—Shore community only a few miles from New Haven. Physician will assist with establishing practice.

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Internist—Board certified or eligible with interest in allergy, rheumatology or infectious diseases wanted to associate with Grove Hill Clinic. W. T. Livingston, M.D., Grove Hill Clinic, New Britain, Connecticut.

Internist—Third physician needed for internal medical practice in Hartford.

Internist—Need for cardiologist in the Waterbury area.

Internist—Preferably Board Certified or eligible, for chronic disease and cancer hospital having sections for TB in adults and children. 35 hr. week, 11 paid holidays, sick leave, 3 weeks vacation after one year of service. Salary level: $23,227-28,333. Paid health insurance and minimum charge for life insurance. Apartment available for physician with small family. Write Medical Director, Uncas-on-Thames Hospital, Norwich, Connecticut 06360.

Internist—Associate needed to join two other internists in southern Fairfield County. Conveniently located. Community hospitals in the vicinity.

Internist—Medium sized Berkshire Hills Community in northwest Connecticut within easy access to Hartford, New York, Boston. Modern 85 bed hospital with new coronary intensive care unit. Academic affiliations available. Opportunities available with another ABIM certified specialist for multi-specialty group practice to provide guaranteed free time. Initial competive subsidy.

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Ophthalmologist—Four vacancies. Each in the larger cities of Connecticut. Immediate opportunities.

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Otolaryngologist—Associate needed to join two other physicians in an urban area in central Connecticut.

ANNOUNCING

181st ANNUAL MEETING

CONNECTICUT STATE MEDICAL SOCIETY

APRIL 24, 25, 26, 1973

HARTFORD HILTON HOTEL,
HARTFORD

* * *

TUESDAY, APRIL 24
ANNUAL MEETING OF THE HOUSE OF DELEGATES

* * *

WEDNESDAY, APRIL 25 — THURSDAY, APRIL 26
SCIENTIFIC PROGRAM
MEETINGS OF SECTIONS AND
GUEST ORGANIZATIONS

* * *

CALL FOR SCIENTIFIC EXHIBITS

The Scientific Exhibits Committee announces that exhibit applications are now being received for the annual meeting. Exhibits large or small, not more than 7 feet deep and eight feet wide, are welcomed from members, sections of the Society and hospital staffs.

Applications for exhibit space may be obtained from the
Connecticut State Medical Society office
160 St. Ronan Street, New Haven, 06511

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Pediatrics—Needed for growing community in the central Connecticut area. Small community hospital. Search Committee willing to assist with the establishing of a practice.

Pediatrics—Third pediatrician needed to join two young Board certified, Fellows of AAP, eastern part of the state. Large, general pediatrics practice. Good first year salary with corporate benefits and full partnership after two years.

Pediatrics—Additional coverage needed in the New London area.

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Psychiatrist—For greater Bridgeport Community Mental Health Center to be opening in October, 1972. Contact: Robert J. McCully, 1862 East Main Street, Bridgeport, Connecticut.

Psychiatrists—Needed for state facility. Write Superintendent, Norwich Hospital, Norwich, Connecticut 06360.

Psychiatrists—Openings in mental hospitals and mental health clinics under the auspices of the State of Connecticut. Write Personnel Administrator, Department of Mental Health, 90 Washington Street, Hartford.

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Child Psychiatrist—Chief administrator of small, inner-city child guidance center with core staff of many disciplines—$25,598-$30,974. All State benefits provided Write: C. Launi, Connecticut Department of Mental Health, 90 Washington Street, Hartford, Connecticut 06115. 203-566-5237.

Director of Environmental Health—Physician needed to be liaison between home office of insurance company and industrial clients. Industrial experience as physician required. To make recommendations on how to improve industrial environment and lower insurance rates.

ANYONE INTERESTED IN THE ABOVE IS ASKED TO CONTACT THE PHYSICIANS' PLACEMENT SERVICE, 160 ST. RONAN STREET, NEW HAVEN, CONNECTICUT

Special Article

Early Days of The State Medical Journal

Stanley B. Weld, M.D.

It gives me great pleasure to present to our readership from the Founding Editor, Dr. Stanley B. Weld, a brief history of the origins and early days of *Connecticut Medicine* or as it was known the *Journal of the Connecticut State Medical Society*.

I have had a lively correspondence with this energetic octogenarian who was a leader in obstetrics and gynecology in Hartford for over fifty years.—W.F.E.

In August 1972 the *Connecticut State Medical Journal* passed its 36th birthday. At a special meeting of the House of Delegates of the State Medical Society held in New Haven on January 16, 1936 it was recommended "that the publication of a single bound volume of the Transactions of the Connecticut State Medical Society be discontinued. In the place thereof there shall be published a 'Quarterly Bulletin of the Connecticut State Medical Society' in the months of May, August, November and February of each year and distributed to all the members of the Society." At this same meeting it was recommended that there be established a Secretary on Scientific Work, part of whose duties was "to edit, publish, and distribute through the central office of the Society the Quarterly Bulletin." The above recommendations were adopted at the meeting of the House of Delegates held in Hartford on May 20, 1936. Stanley B. Weld was selected as Secretary on Scientific Work and the Quarterly Bulletin was born.

In order to finance this new venture it was necessary to secure advertising and this was done by personal solicitation on the part of the editor. I spent a day each week visiting potential advertisers by way of the old crowded roads of Connecticut since there were no interstate highways in those days. Twenty-five advertisements totalling 15¼ pages were secured for the first issue. Instead of naming the new publication "Bulletin", it was felt wise to call it "Journal of the Connecticut State Medical Society." Shortly after it reached the age of maturity it was renamed "Connecticut Medicine."

The first issue in August 1936 contained a dedication "to the late James Tate Mason, M.D., President of the American Medical Association;" editorials on "Medical Expert Testimony" and "Social Security in Connecticut;" a message by Daniel A. Patterson, president of the Society, and one by James D. Gold, chairman of the Council; an article titled "Medical Expert Testimony" by Past President Thomas P. Murdock, and one on "Cancer Problems in Connecticut" by Charles L. Larkin, chairman of the Committee on Tumor Study. A special article appeared titled "In Carrying Out Provisions of the Social Security Act" by Stanley H. Osborne, State Commissioner of Health. The remainder of this issue included Proceedings of the House of Delegates, program of the Twelfth Clinical Congress, a list of officers and committees of the County Medical Associations, and a few notices.

I soon became aware of the existence of the State Journal Advertising Bureau operating in Chicago under the aegis of the American Medical Association whose function was to assist the component State Societies in securing national advertising. To secure the assistance offered by the Bureau, it was necessary to publish monthly rather than quarterly. This change was made and in January 1938 the first monthly issue appeared highlighted by a message from Governor Wilbur L. Cross. An Editorial Board was formed consisting of Stanley B. Weld, editor-in-chief; Frank Stafford Jones, treasurer of the Board; Charles Mirabile, Oliver Stringfield and Herbert Thoms. County News Editors were appointed by the Board. The printing was done by James Reid in Hartford and all the editorial work at first was carried on in the professional office of the editor-in-chief. It was not long before the latter arrangement was found unsatisfactory, so office space was rented on Church Street in Hartford and a full-time secretary hired.

In March 1941 the printing contract was shifted to Whaples-Bullis Company in New Haven. With the expert assistance of Dr. Thoms, a new cover was designed for the Journal employing an attractive red margin. In August 1949 the State Society moved its official offices into its new building on St. Ronan Street in New Haven and space was allocated there to the Journal. A new full-time secretary, Mrs. Vivian C. Feriola, was selected and continues to give her valuable services at the present date.

The Journal was never intended to be solely a publication of scientific papers, competing with such national publications, and specialty journals. As recommended by the Council, it was to contain "complete reports of business transacted by the House of Delegates . . . and all reports presented before the House . . . comprehensive abstracts of all papers presented before the Connecticut Clinical Congress, (and) such papers of conspicuous merit which may have been presented before the State Society or any County Association during the year." Early in the life of the Journal, Herbert Thoms was named Literary Editor and one of his aims was to encourage members of the Society to write original papers for the Journal. It was also through his efforts that a section on medical history was instituted. Many of the historical papers were subsequently published in book form, such as Dr. Paul Swett's *Orthopedic Surgery in Connecticut* and *Heritage of Connecticut Medicine* by several authors. During World War II many interesting letters were published from members in the Armed Forces. Creighton Barker, the Society's secretary, contributed many valuable articles and editorials, as well as a department in the Journal ,The Secretary's Office. News from the County Associations, from other New England State Societies, a President's Page, book reviews, obituaries and items of medical interest in general were included. The Journal was recognized, not only for these many features, but as a house organ of the Society.

During the 22 years the first editor served the Journal, the Editorial Board was enlarged to include many prominent members of the Society. When Dr. Thoms retired as Literary Editor, Harold M. Marvin was elected in his stead and served with distinction. Times have changed and with them the Journal has changed. The late Dr. Louis H. Nahum did a masterful job in fashioning the publication along the lines of his conception. During the years of the mid-century State medical journal advertising was at its peak. It was not found necessary then to place a half-page advertisement on the front cover nor to include advertisements with reading matter. This is now the pattern and, though many of us regret it, the change has become one of financial necessity.

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Radiologic Case of the Month
Sickle Cell Anemia

Harold Moskowitz, M.D.

History

39 year old Negro male entered the Mount Sinai Hospital Emergency Room with dyspnea. The patient has had increase in dsypnea over the past several months associated with aching in most of his joints. Physical examination revealed a thin, Negro male with a pulse rate of 110 and a respiratory rate of 32. He was obviously cyanotic. Hemoglobin was 8.2. Hemoglobin electrophoresis revealed an S-S pattern.

DR. HAROLD MOSCOWITZ, Director, Department of Radiology, Mount Sinai Hospital, Hartford, Conn.

Discussion

Sickle cell anemia is one of a group of related entities under the general title of hemoglobinopathies. The incidence of hemoglobin S in the Negro population is approximately 10% while the incidence of sickle cell anemia is approximately 1.5%. Variations of normal hemoglobin are demonstrated by protein electrophoresis. Hemoglobin S-A is the benign sickle cell type while the homozygous S-S is sickle cell anemia. Other variations are hemoglobin S-C disease and Sickle-Thalassemia.

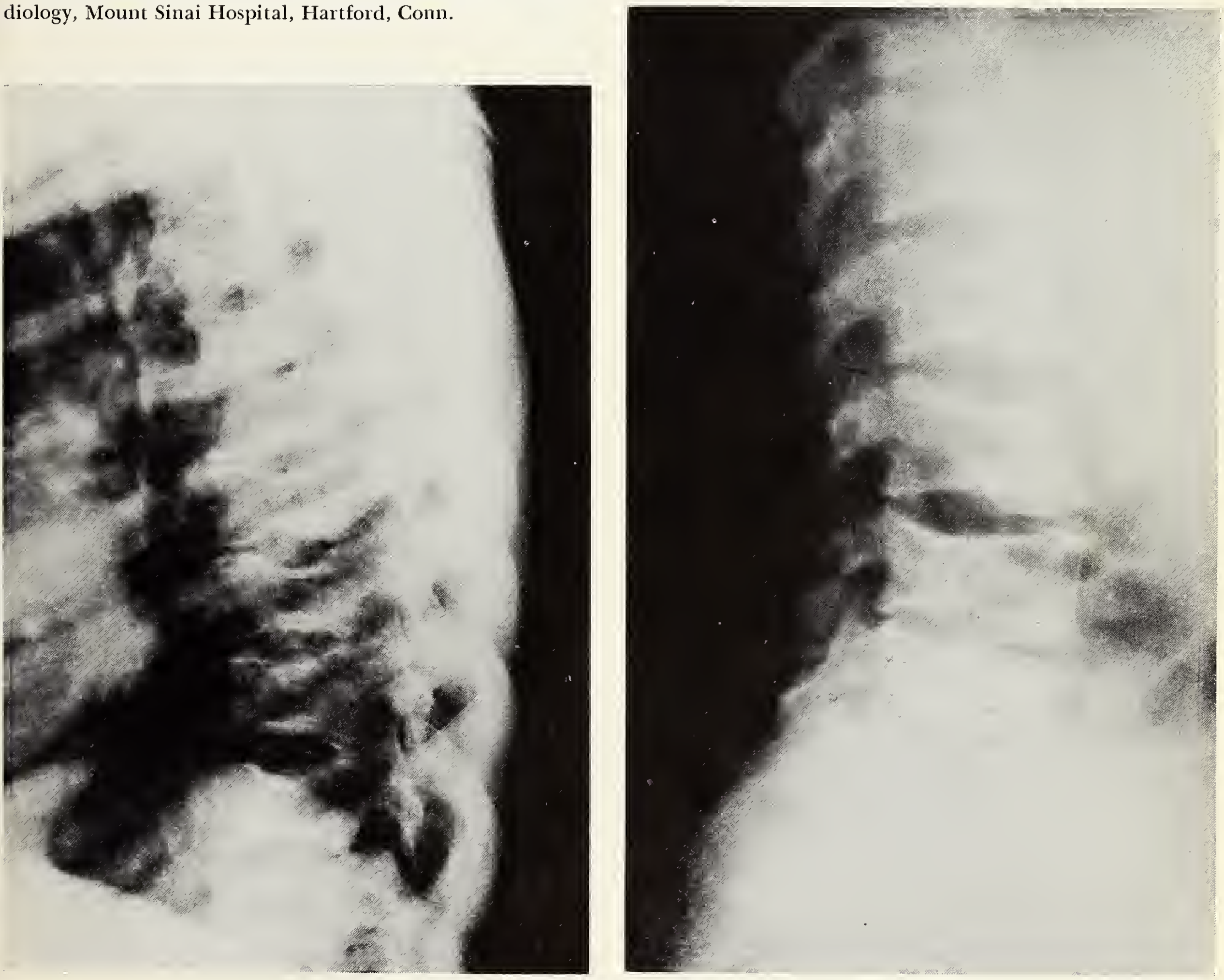

Figure 1 and 2

Reveal typical "H" deformity of the vertebral bodies secondary to infarction of the end plates.

The radiographic features of sickle cell disease are many and extremely varied. In the vertebral column, there is coarsening of the trabecular pattern of the vertebral body with the characteristic "H Vertebra". (Fig. 1, 2) This is thought to be secondary to infarction of the nutrient vessel of the end plate with secondary asceptic necrosis. In the extremities there is some lack of tubulation with thinning of the cortex; however, these findings are not as pronounced as in thalassemia. In the long bones chronic anoxia produces a characteristic unique "bone within a bone" pattern caused by ischemia and bony sclerosis. These changes are generally confined to the medullary space just beneath the cortex. Characteristic asceptic necrosis seen in the epiphysis in the region of the pelvis and humerus. The increased sclerotic changes characteristic of asceptic necrosis are not generally seen before the epiphysis begins to fuse.

Osteomyelitis is a complication of sickle cell anemia. The most common infectious agents are salmonella and staphylococcus. Painful bony crises should make one suspect the possibility of salmonella osteomyelitis, especially in younger patients.

Cardiac enlargement secondary to the anemia generally develops. Lung findings, possibly due to pulmonary infarcts and hemorrhage occur. The spleen is initially normal to somewhat larger in size, but develops numerous infarcts and becomes quite small. Deposition of hemosiderin within the spleen in the left upper quadrant can be seen. In hemoglobin S-C disease the spleen is characteristically enlarged with a mottled configuration.

The skull reveals occasionally thickening of the diploe. In severe disease expansion of the diploe can occur with the typical "hair-on-end" pattern. In the kidney renal papillary necrosis is the most frequent finding, associated with some swelling of the kidney.

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Jacobsen, G. and Tuckerman, S. "Roentgenographically Demonstrable Splenic Deposits in Sickle Cell Anemia." American Journal of Radiology, 76:47-53, 1956.

Sherman, M. "Pathogenesis and Disintegration of the Hip in Sickle Cell Anemia." Southern Medical Journal, 52:632-638, 1959.

"It is not so important that many should be as good as you, as that there should be absolute goodness somewhere for that will leaven the whole lump."—Henry Thoreau: *On the Duty of Civil Disobedience.*

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SEMI-ANNUAL MEETING

It was delightfully arranged by Maude O'Keefe of West Hartford and Claire Whalley, Waterbury, at the Hawthorne Inn on October 24. Sunshine en-route and chrysanthemum centerpieces were appreciated. Auxilians appeared, like the chrysanthemums, showy in various colors and sizes. President Bobbie Czarsty of Oakville presided and discussed the 1972 Fall Conference at the Drake Hotel in Chicago, October 8-11, which she and Peggy Roch, Mansfield, had enjoyed. State officers and committee chairmen and county presidents reported. Ethel Wirth, Woodbridge, editor of the rejuvenated *Connecticut Quarterly,* and Betty Gardner, East Hampton, recently elected National Eastern Regional Vice President, were applauded. Aileen Barker, Collinsville, who had attended the Cherry Hill Workshop, displayed an exciting assortment of AMA-ERF gifts. Betty Knight, Bloomfield, Emma Harwood, Middletown, and Peggy Roch also reported on the Eastern Regional Workshop in Cherry Hill, New Jersey, October 16-17.

Maude O'Keefe introduced the speaker, a beautiful Indian girl, elegant with piled-high hair and a green sari, Dr. Vijaya Bapat, who is employed by the maternal and child health section of the State Department of Health. Dr. Bapat is a graduate of Mahatma Gandhi Memorial Medical College, Indore, India, and lives in Windsor with her husband and two children. She discussed "Child Rearing Practices in India" and she said:

"All we need to know about sound bases of child rearing can be learned from grandmothers and greatgrandmothers. Grandparents are the most wonderful things you could have around the home. In India, birth is a great occasion. A son is desired to preserve the family name, but after he is born any number of sisters and brothers are welcomed as God's gifts to the family. Midwives deliver babies at home and, due to high infant mortality, layettes are not prepared until after their birth. A boy's twelfth day, or a girl's thirteenth day, is a family holiday for naming the baby, a ceremony performed by the father's sister. On Name Day she pierces the ears of a girl child and the mother and child receive gifts.

"Babies have first priority in the Indian household and guests prepare their own meals rather than disturb the mother-baby routines. Each day the mother sits on the floor to massage and bathe the baby who is placed on a four-inch-high table. Indian infants are breast-fed until after they are two years old and are given mashed cereals and vegetables and fruits after the sixth month. They are encouraged to sit up and to walk with supportive wooden sticks. Grandparents are in charge of teaching the baby who receives much attention due to the availability of people in the relative-extended Indian home.

"Children are encouraged to express themselves but are not permitted to be rude. Age and knowledge are respected at home and at school. There are many family holidays including Mother's Day and Father's Day. On Brother's and Sister's Day the sister ties a silk thread on her brother's wrist and he gives her a gift to signify that he will always protect and help her. The family goes to the Temple for festivals and family prayers precede the evening meal. A Sanskrit proverb advises that a child be loved and spoiled until the age of five, disciplined until ten, taught until fifteen, and then treated as a friend."

Members applauded Dr. Bapat who had reaffirmed their belief in the importance of a close and loving family in the rearing of us all.

OBITUARY

Herbert Thoms, M.D.
1885-1972

On the wall of my study are three etchings of old Connecticut landmarks, just one evidence among the many fields of endeavor in which Dr. Thoms excelled. He was an accomplished artist, an internationally renowned obstetrician, an outstanding writer of medical historical biographies, an excellent teacher and a true friend.

Herbert Thoms was born in Waterbury, Connecticut, of an old New England family on June 5, 1885, the son of William Peter and Adeline Delia (Hart) Thoms. His early education was acquired in the local schools and in 1910 he received his M.D. degree from Yale School of Medicine. There followed internships at Backus Hospital in Norwich, then at Memorial Hospital in New London, an assistant residency at Sloane Hospital for Women in New York, and finally a year of postgraduate work in obstetrics at Johns Hopkins University in Baltimore under the celebrated J. Whitredge Williams. In 1915 he returned to New Haven and joined Yale School of Medicine as an assistant in the Department of Obstetrics and Gynecology. To round out his training he served the following year as an assistant in the Department of Pathology at the same School. In 1927 Dr. Thoms became Associate Professor in the Department of Obstetrics and Gynecology at Yale and 18 years later was made a full professor and chairman of the department. Thus he served the medical school and his chosen profession until his retirement in 1953 when he became Professor Emeritus.

To cite all the accomplishments of this talented physician is no simple task. Probably the most outstanding was his development of the pelvimeter in obstetrics and his application of X-ray pelvimetry in the care of pregnant women. He was responsible for establishing a program of natural childbirth at a time when the administration of drugs in labor had reached an all-time high. To this he added his plan for infant rooming-in after delivery and later a program of trained midwives to care for normal deliveries.

His name became a byword in political circles when as Chairman of the Medical Advisory Council of Connecticut Planned Parenthood League in 1961 he was at the forefront in the successful legal battle to upset the State laws prohibiting the dissemination of birth control information. Another one of his firsts was the founding of the Yale-New Haven Infertility Clinic of which he became the head.

All of the above would seem to the casual observer to be enough for any one man to carry on. Not so with Herbert Thoms. His accomplishments in the literary field were legion. He became an outstanding medical historian, particularly in the field of the early colonial period in Connecticut and produced an extensive bibliography, a few being "Chapters in American Obstetrics," "The Doctors of Yale College," and "Jared Elliot: Minister, Doctor, and Scientist, and His Connecticut." It will be no surprise to learn that he was early elected to the Editorial Board of the *Connecticut State Medical Journal* on which he served with distinction, later becoming its Literary Editor. It was one of his aims to encourage and aid the members of the State Medical Society in writing original articles for publication.

In 1941, in recognition of his scholarly interest and his many contributions to medical literature, he was named Curator of Yale Medical Memorabilia. In addition he became Chairman of the Associates of the Yale Medical Library from the time the group was founded in 1948 until the spring of

1967 when he was elected Honorary Chairman. He was the recipient of many awards. In 1953 it was the Lasker Award which was given him "in recognition of his contribution to marital health and happiness in the related fields of obstetrics, marriage counseling and treatment for infertility." In 1961 he was one of four selected to receive the annual Yale University Medal awarded by the Alumni Board for "outstanding service to the community." In 1967 the Herbert Thoms Book Fund was established as a tribute to his many services to Yale Medical School and its medical library.

Dr. Thoms was one of the founders and a past president of the Beaumont Medical Club which was formed for the purpose of maintaining interest in the history of medicine and the allied sciences. He had also been a member of the Elizabethan Club at Yale and was a former editor of the *Yale Journal of Biology and Medicine.* He was a consultant to at least seven Connecticut hospitals. His memberships included the American Medical Association and the American Gynecological Society. He was a former president of the New Haven County Medical Association, and a former Fellow of the New York Obstetrical Society; the New England Surgical Society; the Gynecological Society; and the American College of Surgeons.

In 1912 Herbert Thoms married Edith May Comstock. She died in 1966. He is survived by his daughter, Margaret A. Thoms of Stony Creek, Branford; by two brothers, David B. Thoms of Torrington and Floyd L. Thoms of Litchfield; and by a sister, Mrs. William C. Patman of New Canaan. Death came at the age of 87 after a long illness.

As we look back on the life of Herbert Thoms there comes to mind that saying of the beloved physician, Sir William Osler:

> "We are here to add what we can to,
> not get what we can from, Life."

Stanley B. Weld, M.D.

In Memoriam

Costanzo, James J., University of Illinois, 1905. Dr. Costanzo was a practicing physician in the Fairfield area since 1906 until his retirement 5 years ago. He was a member of the Fairfield County Medical Association and the Connecticut State Medical Society. Dr. Costanzo died October 15, 1972, at the age of 88.

DiFrancesco, Lindo P., Tufts University Medical School, 1931. Dr. DiFrancesco was a practicing physician in the Fairfield area since 1933, and served as president of the Stamford Medical Society in 1961. He was a member of the Fairfield County Medical Association and the Connecticut State Medical Society. Dr. DiFrancesco died October 16, 1972, at the age of 66.

Green, H. Howard, Johns Hopkins Medical School, 1931. He was an orthopedic surgeon in the Fairfield area since 1939. He was a member of the staff of Norwalk Hospital since 1939 and had served as chief of the Orthopedic Department. He was a former president of the Norwalk Medical Association, a member of the Fairfield County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Green died October 23, 1972, at the age of 65.

Spinelli, Nicholas V., Marquette Medical School, 1939. Dr. Spinelli was a general practitioner and radiologist in the Fairfield area since 1939. He was a member of the Fairfield County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Spinelli died October 2, 1972, at the age of 62.

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STYLE

The first page should list title, the author (or authors), degrees, hospital positions and any institutional or other credits. References should conform to the usual style of the Journal. The following minimum data should be typed double spaced: names and initials of all authors, complete title of the article cited, name of journal, volume number, first and last page numbers, and year of publication. All references must be cited in the text. They should be arranged according to the order of citation, and not alphabetically. All references must be numbered consecutively. The number should be limited to the absolute minimum. Personal communications and unpublished data should not be included.

LENGTH OF ARTICLES

Ordinary articles should not exceed 2,500 words (approximately 3 printed pages). Under exceptional circumstances only will articles of more than 4,000 words be published.

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Illustrations should be numbered consecutively and indicated in the text. The number, indication of the top, and the author's name should be attached to the back of each illustration. Legend should be typed, numbered, and attached to each illustration as well as typed on a separate sheet. Photographs should be clear and distinct; drawings should be made in black ink (preferably India ink) on white paper. For half tones, glossy photographs should be submitted. Connecticut Medicine will pay the cost of printing two cuts accompanying manuscripts submitted for publication. The cost of printing more than two cuts must be paid for by the author.

DEADLINES

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